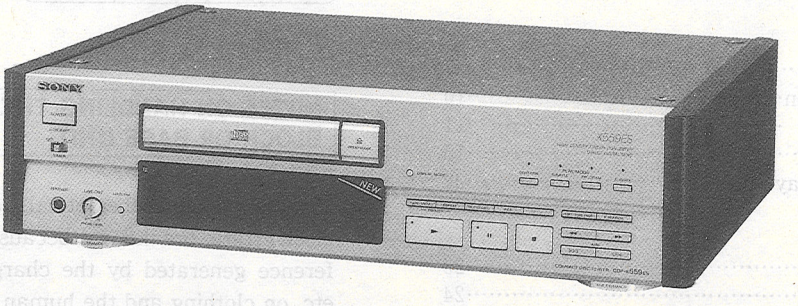
CDP-X559ES

SERVICE MANUAL

AEP Model
UK Model
E Model



(GOLD)

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM19C-6G50 : (BLACK) CDM19D-6G50 : (GOLD)
Optical Pick-up Block Type	BU-6G

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz−20 kHz±0.3 dB
Signal to noise ratio	More than 118 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0017%
Channel separation	More than 110 dB
Laser output	Max. 44.6μW This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2V (at 50 kiloohms) Load impedance over 10 kiloohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2V (at 50 kiloohms) Load impedance over 50 kiloohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level −18 dBm
HEADPHONES (Stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

General

Power requirements	AEP model: 220−230 V AC, 50/60 Hz UK model: 240 V AC, 50/60 Hz E model: 110−120 or 220−240 V AC adjustable, 50/60 Hz
Power consumption	29 W
Dimensions (approx., including projections)	AEP model: 470×125×375 mm (w/h/d) (18 5/8×5×14 7/8 inches) UK model: 430×125×375 mm (w/h/d) (17×5×14 7/8 inches) E model: 470×125×375 mm (w/h/d) (18 5/8×5×14 7/8 inches)
Weight (approx.)	AEP model: 13 kg UK model: 12 kg E model: 12.2 kg

Remote commander (RM-D891) (GOLD) (AEP model)
(RM-D991) (BLACK)

Remote control system	Infrared control
Power requirements	3 V DC with two batteries size AA (IEC designation R6)
Dimensions	62×18×175 mm (w/h/d) (2 1/2×23/32×7 inches)
Weight	135 g (4.6 oz) Including batteries

Supplied accessories

Connecting cord	1 (2 phono plugs ↔ 2 phono plugs)
Remote commander	1
Sony SUM-3(NS) batteries	2
Screws	8 (except for UK model)

Design and specifications are subject to change without notice.

MICROFILM

COMPACT DISC PLAYER

SONY®

H1 385

CDP-X559ES

SERVICE MANUAL

AEP Model
UK Model
E Model

(GOLD)

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM19C-6G50 : (BLACK) CDM19D-6G50 : (GOLD)
Optical Pick-up Block Type	BU-6G

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz−20 kHz±0.3 dB
Signal to noise ratio	More than 118 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0017%
Channel separation	More than 110 dB
Laser output	Max. 44.6μW This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2V (at 50 kiloohms) Load impedance over 10 kiloohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2V (at 50 kiloohms) Load impedance over 50 kiloohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level −18 dBm
HEADPHONES (Stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

General

Power requirements	AEP model: 220−230 V AC, 50/60 Hz UK model: 240 V AC, 50/60 Hz E model: 110−120 or 220−240 V AC adjustable, 50/60 Hz
Power consumption	29 W
Dimensions (approx., including projections)	AEP model: 470×125×375 mm (w/h/d) (18 5/8×5×14 7/8 inches) UK model: 430×125×375 mm (w/h/d) (17×5×14 7/8 inches) E model: 470×125×375 mm (w/h/d) (18 5/8×5×14 7/8 inches)
Weight (approx.)	AEP model: 13 kg UK model: 12 kg E model: 12.2 kg

Remote commander (RM-D891) (GOLD) (AEP model)
(RM-D991) (BLACK)

Remote control system	Infrared control
Power requirements	3 V DC with two batteries size AA (IEC designation R6)
Dimensions	62×18×175 mm (w/h/d) (2 1/2×23/32×7 inches)
Weight	135 g (4.6 oz) Including batteries

Supplied accessories

Connecting cord	1 (2 phono plugs ↔ 2 phono plugs)
Remote commander	1
Sony SUM-3(NS) batteries	2
Screws	8 (except for UK model)

Design and specifications are subject to change without notice.

COMPACT DISC PLAYER

SONY®

TABLE OF CONTENTS

Section *Title* *Page*

1. GENERAL

1-1. Identifying the Parts ········· 3

2. ELECTRICAL BLOCK CHECKING ········· 5

3. DIAGRAMS

3-1. Block Diagram ········· 7
3-2. Circuit Boards Location ········· 10
3-3. Printed Wiring Boards ········· 11
3-4. Schematic Diagram ········· 15
3-5. Semiconductor Lead Layouts ········· 22

4. EXPLODED VIEWS

4-1. Cabinet Section ········· 23
4-2. Front Panel Section ········· 24
4-3. Chassis Section ········· 25
4-4. CD Mechanism Block Section ········· 26
4-5. Base Unit Section ········· 27

5. ELECTRICAL PARTS LIST ········· 28

For the United Kingdom and European countries

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

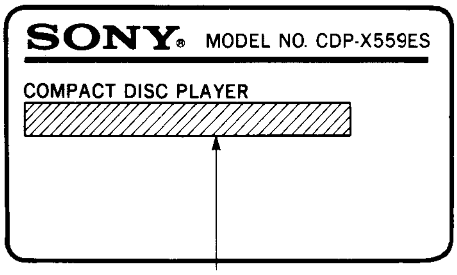
The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential diference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

MODEL IDENTIFICATION

—Model Number Label—



AEP model: AC: 220－230V～50/60Hz
UK model: AC: 240V～50/60Hz
E model: AC: 110, 120, 220, 240V～50/60Hz 29W

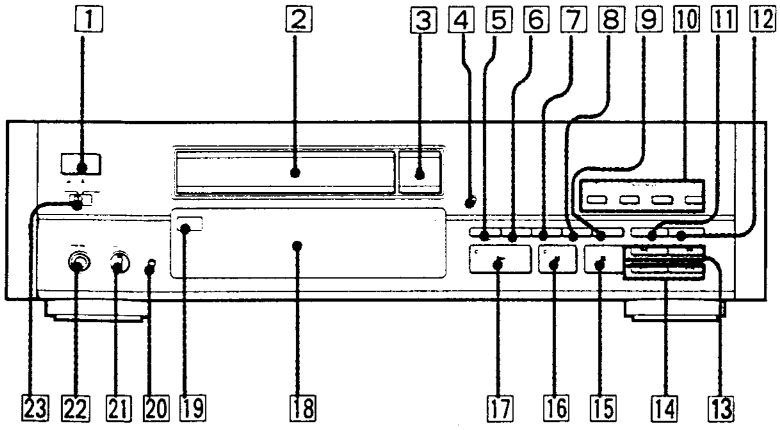
SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. IDENTIFYING THE PARTS

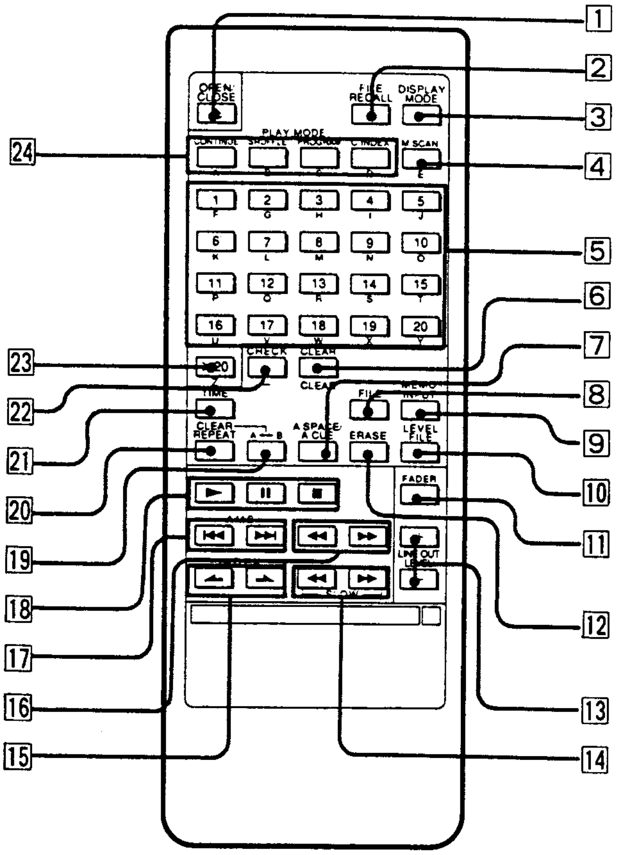


Front Panel

Refer to the pages indicated in ( ) for details.

1 POWER switch (22)
2 Disc tray (22)
3 ⏏ OPEN/CLOSE button (22)
4 DISPLAY MODE button (24)
5 TIME/MEMO button (24)
6 REPEAT button (42)
7 FILE RECALL button (78)
8 FILE (custom file) button (78)
9 ERASE (memory erase) button (78)
10 PLAY MODE buttons
  CONTINUE button and indicator (22)
  SHUFFLE button and indicator (32)
  PROGRAM button and indicator (46)
  C. (custom) INDEX button and indicator (92)
11 EDIT/TIME FADE button (70)
12 P. (peak) SEARCH button (74)
13 ◀◀ ▶▶ (manual search) buttons (28)
14 ⏮ ⏭ AMS* buttons (26)
15 ■ (stop) button (22)
16 ❚❚ (pause) button and indicator (22)
17 ▶ (play) button and indicator (22)
18 Display window (24)
19 Remote sensor
20 LEVEL FILE button (98)
21 LINE OUT/PHONE LEVEL control (22)
22 PHONES jack (22)
23 TIMER switch (100)

* AMS is the abbreviation of Automatic Music Sensor.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
OPEN/CLOSE
FILE RECALL
DISPLAY MODE
PLAY MODE
CONTINUE
SHUFFLE
PROGRAM
C. INDEX
M SCAN
>20
CHECK
CLEAR
TIME
CLEAR
FILE
MEMO INPUT
CLEAR REPEAT
A↔B
A SPACE/A CUE
ERASE
LEVEL FILE
FADER
AMS
LINE OUT LEVEL
SLOW

Remote Commander

Refer to the pages indicated in ( ) for details.

1 ⏏ OPEN/CLOSE button (22)
2 FILE RECALL button (78)
3 DISPLAY MODE button (24)
4 M. (music) SCAN button (38)
5 Numeric buttons (26)
6 CLEAR button (36, 46)
7 A. SPACE (auto space)/A.CUE (auto cue) button (30, 72)
8 FILE (custom file) button (78)
9 MEMO INPUT button (80)
10 LEVEL FILE button (98)
11 FADER (fade in/fade out) button (72)
12 ERASE button (78)
13 LINE OUT LEVEL (line out/headphones level) buttons (22)
14 ◄◄ ►► SLOW (low speed manual search) buttons (28)
15 — — INDEX buttons (28)
16 ◄◄ ►►(manual search) buttons (28)
17 |◄◄ ►►| AMS* buttons (26)
18 ■ (stop) button (22)
❚❚ (pause) button (22)
► (play) button (22)
19 A ↔ B repeat button (44)
20 REPEAT (repeat/A-B repeat clear) button (42)
21 TIME button (24)
22 CHECK button (46)
23 > 20 (over 20) button (26)
24 PLAY MODE buttons
CONTINUE button (22)
SHUFFLE button (32)
PROGRAM button (46)
C. INDEX button (92)

Buttons with orange letters (A, B, -- ---) are for writing a disc memo (page 80).

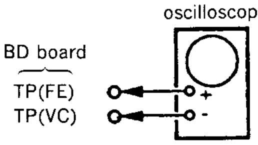
* AMS is the abbreviation of Automatic Music Sensor.

SECTION 2
ELECTRICAL BLOCK CHECKING

Note :

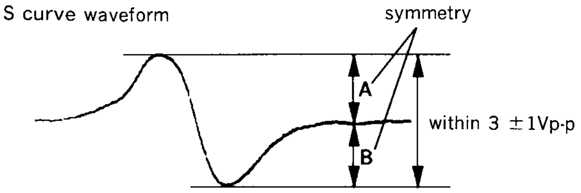
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :

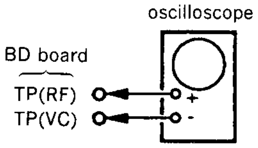
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) with lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.



5. After check, remove the lead wire connected in step 2.

Note :
- Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

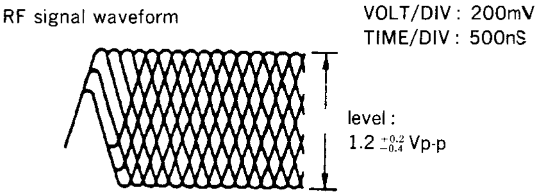


Procedure :

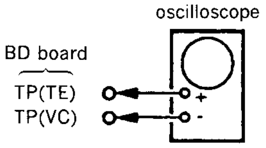
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

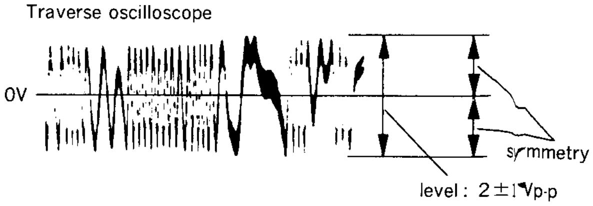


E-F Balance Check



Procedure :

1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wires.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

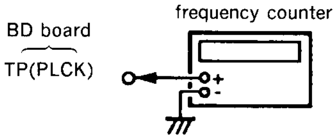


6. Remove the lead wires connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point TP (PLCK) with lead wire.


frequency counter
BD board
TP(PLCK)
+
-

2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

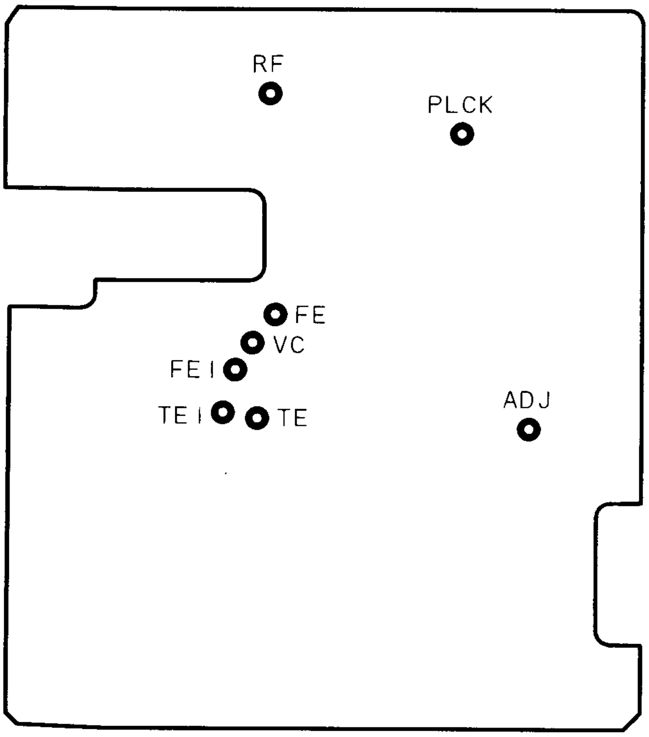
This gain has a margin, so even if it is slightly off.

There is no problem.

Therefore, do not perform, this adjustment.

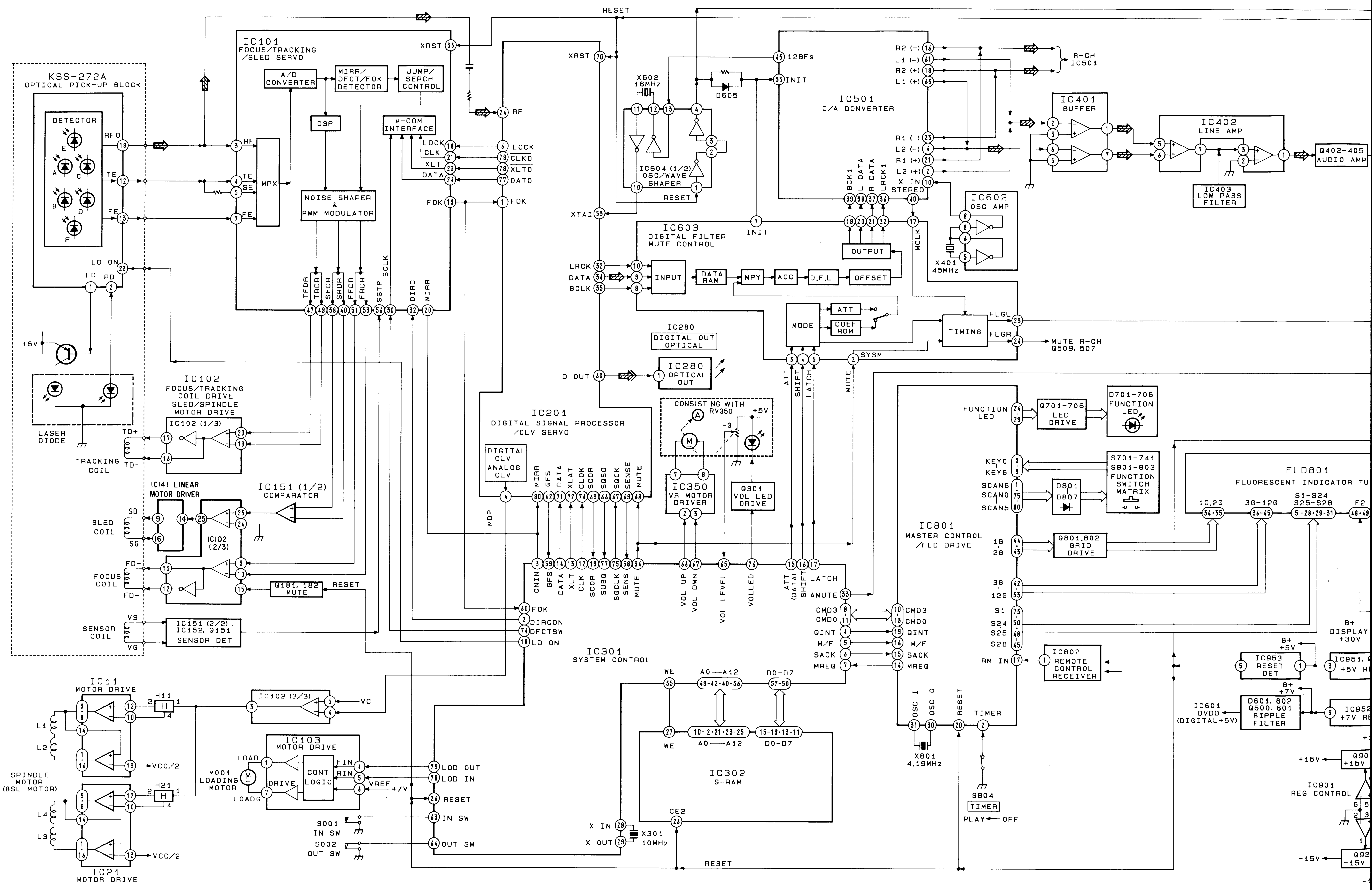
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

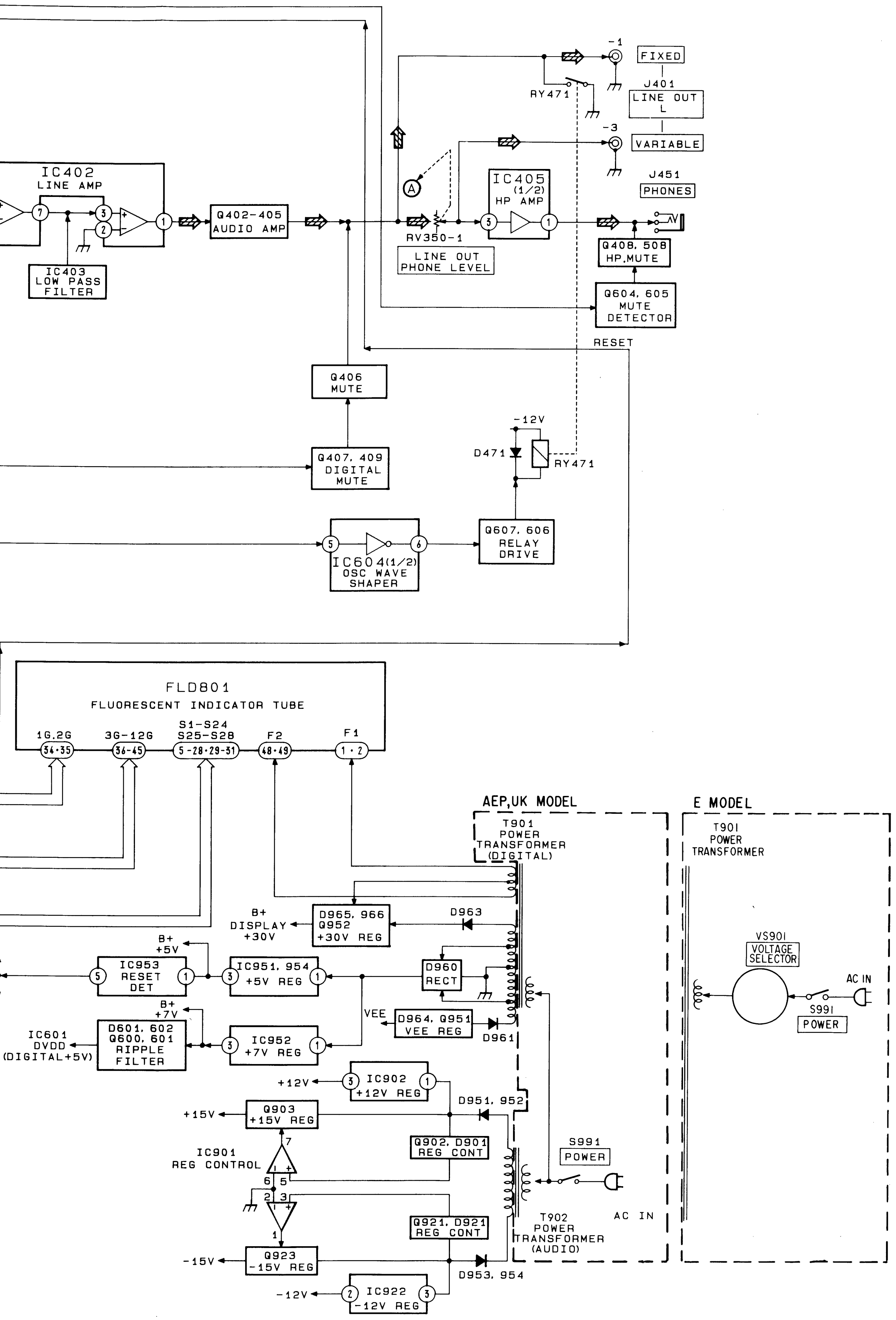
Check Point Location : BD board—side A—


RF
PLCK
FE
VC
FE I
TE I
TE
ADJ

SECTION 3
DIAGRAMS

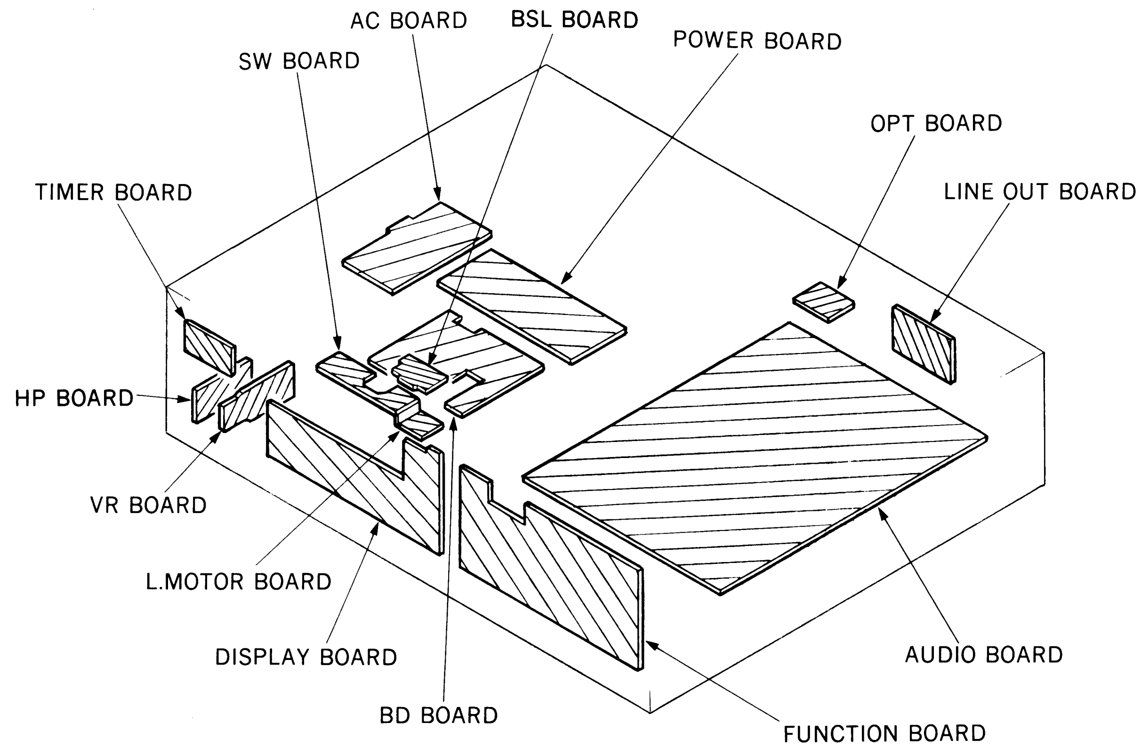
3-1. BLOCK DIAGRAM


KSS-272A
OPTICAL PICK-UP BLOCK
DETECTOR
RFO
TE
FE
LD ON
LD
PD
+5V
LASER DIODE
TRACKING COIL
TD+
TD-
SLED COIL
SD
SG
FOCUS COIL
FD+
FD-
SENSOR COIL
VS
VG
IC101
FOCUS/TRACKING /SLED SERVO
A/D CONVERTER
MIRR/ DFCT/FOK DETECTOR
JUMP/ SERCH CONTROL
DSP
μ-COM INTERFACE
MPX
NOISE SHAPER & PWM MODULATOR
XRST
RF
LOCK
CLK
XLT
DATA
FOK
TFDR TRDR SFDR SRDR FFDR FRDR SSTP SCLK DIRC MIRR
IC102
FOCUS/TRACKING COIL DRIVE SLED/SPINDLE MOTOR DRIVE
IC102 (1/3)
IC141 LINEAR MOTOR DRIVER
IC102 (2/3)
IC151 (1/2)
COMPARATOR
Q181, 182 MUTE
RESET
IC151 (2/2), IC152, Q151
SENSOR DET
IC11
MOTOR DRIVE
H11
H21
L1 L2 L3 L4
SPINDLE MOTOR (BSL MOTOR)
VCC/2
IC21
MOTOR DRIVE
IC102 (3/3)
VC
IC103
MOTOR DRIVE
LOAD
LOADG
M001 LOADING MOTOR
CONT LOGIC
DRIVE
FIN
RIN
VREF
+7V
S001 IN SW
S002 OUT SW
IC201
DIGITAL SIGNAL PROCESSOR /CLV SERVO
DIGITAL CLV ANALOG CLV
MDP
MIRR GFS DATA XLAT CLOK SCOR SQSO SQCK SENSE MUTE
XRST
XTAI
LRCK
DATA
BCLK
D OUT
LOCK CLKO XLTO DATO FOK
IC280
DIGITAL OUT OPTICAL
IC280 OPTICAL OUT
CONSISTING WITH RV350
+5V
IC350 VR MOTOR DRIVER
Q301 VOL LED DRIVE
X602 16MHz
D605
IC604 (1/2) OSC/WAVE SHAPER
RESET
IC603
DIGITAL FILTER MUTE CONTROL
INIT
INPUT
DATA RAM
MPY
ACC
D.F.L
OFFSET
OUTPUT
MODE
ATT
COEF ROM
TIMING
ATT SHIFT LATCH MUTE
SYSM
FLGL
FLGR
MUTE R-CH Q509, 507
IC501
D/A DONVERTER
128Fs
INIT
R2 (-) L1 (-) R2 (+) L1 (+)
R1 (-) L2 (-) R1 (+) L2 (+)
X IN
STEREO
BCK1 L DATA R DATA LRCK1
MCLK
R-CH IC501
IC602
OSC AMP
X401 45MHz
IC401
BUFFER
IC402
LINE AMP
IC403
LOW PASS FILTER
Q402-405 AUDIO AMP
IC301
SYSTEM CONTROL
CNIN GFS DATA XLT CLK SCOR SUBQ SQCLK SENS MUTE
VOL UP VOL DWN VOL LEVEL VOLLED
ATT (DATA) SHIFT LATCH AMUTE
FOK DIRCON DFCTSW LD ON
CMD3 CMD0 QINT M/F SACK MREQ
WE A0—A12 D0-D7
LOD OUT LOD IN RESET IN SW OUT SW
X IN X OUT
X301 10MHz
IC302
S-RAM
CE2
RESET
IC801
MASTER CONTROL /FLD DRIVE
FUNCTION LED
Q701-706 LED DRIVE
D701-706 FUNCTION LED
KEY0 KEY6
SCAN6 SCAN0 SCAN5
D801 D807
S701-741 S801-803 FUNCTION SWITCH MATRIX
1G 2G
Q801,802 GRID DRIVE
3G 12G
S1 S24 S25 S28
RM IN
IC802 REMOTE CONTROL RECEIVER
OSC I OSC O RESET
TIMER
X801 4.19MHz
S804 TIMER
PLAY← OFF
FLD801
FLUORESCENT INDICATOR TU
1G,2G 3G-12G S1-S24 S25-S28 F2
B+ DISPLAY +30V
B+ +5V
IC953 RESET DET
IC951 +5V
B+ +7V
IC601 DVDD (DIGITAL+5V)
D601, 602 Q600, 601 RIPPLE FILTER
IC952 +7V
+15V
Q90 +15V
IC901 REG CONTROL
-15V
Q92 -15V



-1
FIXED
J401
LINE OUT
L
RY471
-3
VARIABLE
J451
PHONES
IC402
LINE AMP
IC403
LOW PASS
FILTER
Q402-405
AUDIO AMP
A
IC405
(1/2)
HP AMP
RV350-1
LINE OUT
PHONE LEVEL
Q408, 508
HP.MUTE
Q604, 605
MUTE
DETECTOR
RESET
Q406
MUTE
Q407, 409
DIGITAL
MUTE
-12V
D471
RY471
Q607, 606
RELAY
DRIVE
IC604(1/2)
OSC WAVE
SHAPER
FLD801
FLUORESCENT INDICATOR TUBE
1G,2G
3G-12G
S1-S24
S25-S28
F2
F1
34·35
36-45
5-28·29-31
48·49
1·2
AEP,UK MODEL
T901
POWER
TRANSFORMER
(DIGITAL)
E MODEL
T901
POWER
TRANSFORMER
B+
DISPLAY
+30V
D965, 966
Q952
+30V REG
D963
B+
+5V
IC953
RESET
DET
IC951, 954
+5V REG
D960
RECT
VS901
VOLTAGE
SELECTOR
AC IN
S991
POWER
B+
+7V
IC601
DVDD
(DIGITAL+5V)
D601, 602
Q600, 601
RIPPLE
FILTER
IC952
+7V REG
VEE
D964, Q951
VEE REG
D961
+12V
IC902
+12V REG
D951, 952
+15V
Q903
+15V REG
S991
POWER
IC901
REG CONTROL
Q902, D901
REG CONT
Q921, D921
REG CONT
T902
POWER
TRANSFORMER
(AUDIO)
AC IN
-15V
Q923
-15V REG
D953, 954
-12V
IC922
-12V REG

3-2. CIRCUIT BOARDS LOCATION



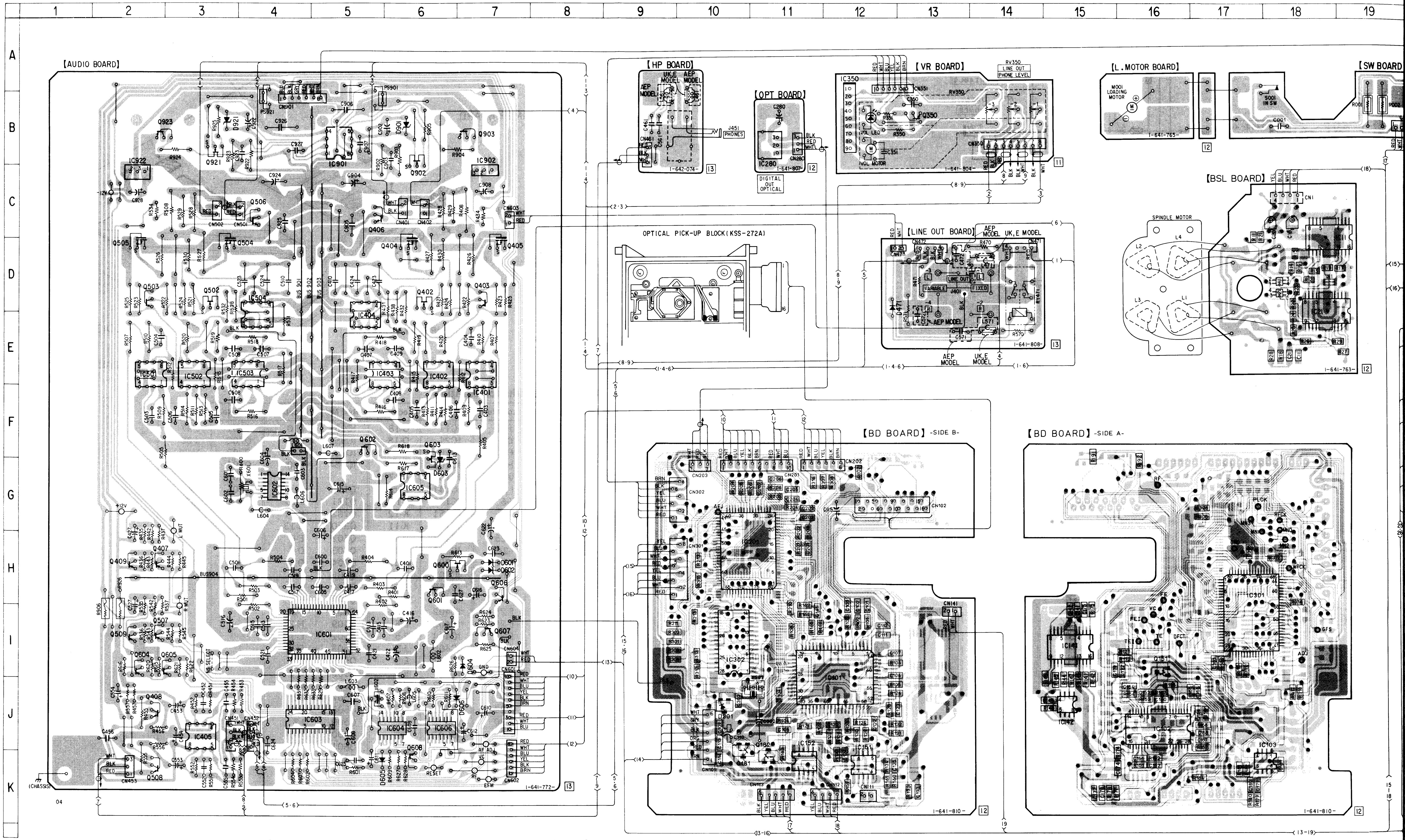
AC BOARD
BSL BOARD
SW BOARD
POWER BOARD
OPT BOARD
TIMER BOARD
LINE OUT BOARD
HP BOARD
VR BOARD
L.MOTOR BOARD
DISPLAY BOARD
BD BOARD
AUDIO BOARD
FUNCTION BOARD

• Semiconductor Location

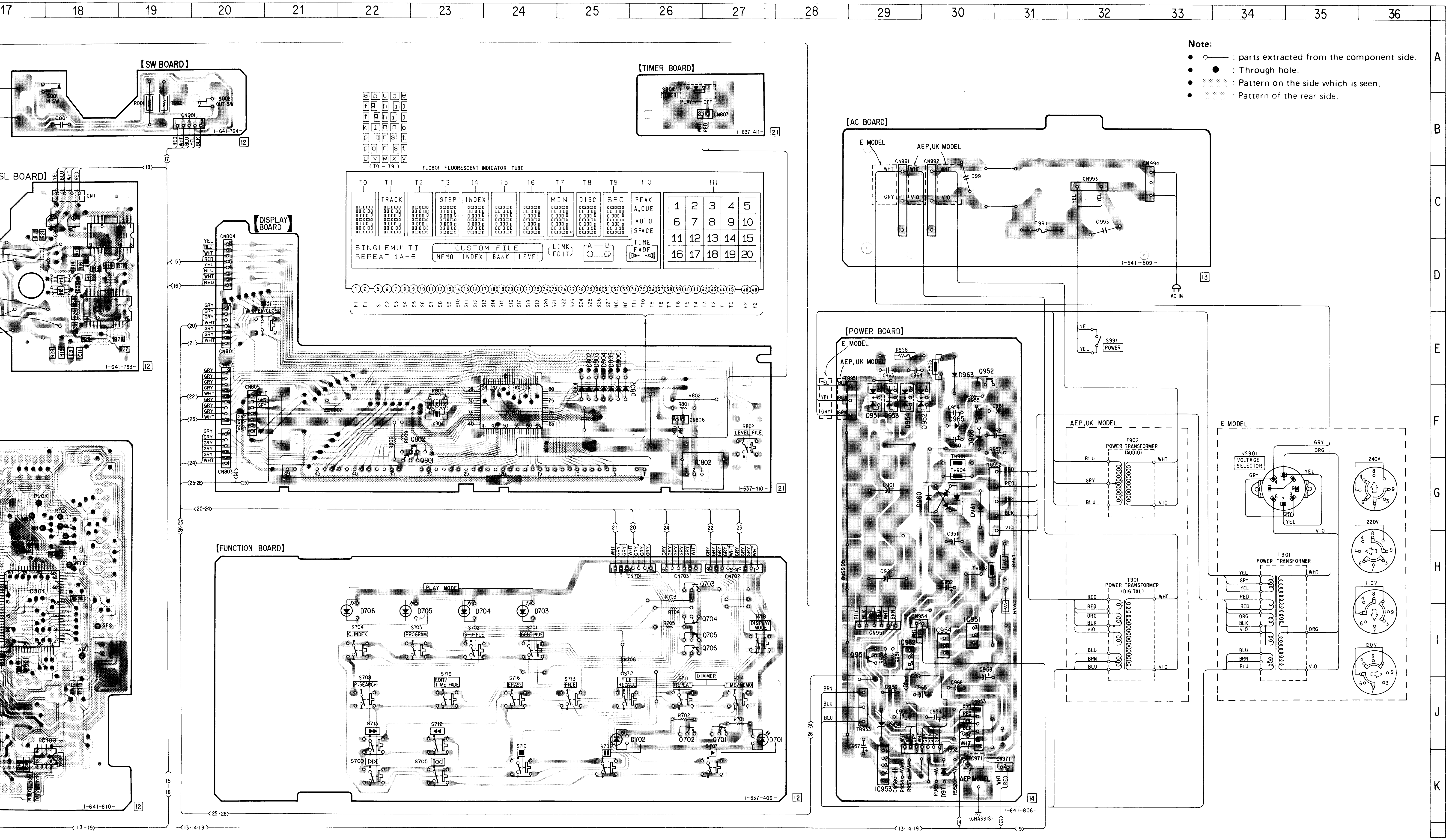
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D301	J-10	IC11	C-18	IC951	I-30	Q701	J-27
D471	D-12	IC21	D-18	IC952	I-29	Q702	J-26
D601	H-7	IC101	I-12	IC953	K-29	Q703	H-26
D602	H-7	IC102	J-16	IC954	I-30	Q704	I-26
D603	G-6	IC103	K-17			Q705	I-26
D604	I-7	IC141	I-15	Q151	I-16	Q706	I-26
D605	J-6	IC142	J-15	Q181	J-10	Q801	G-23
D606	J-6	IC151	K-12	Q182	K-11	Q802	F-23
D701	J-27	IC152	K-11	Q350	B-13	Q902	C-6
D702	J-25	IC201	H-10	Q402	E-6	Q903	B-7
D703	I-24	IC280	B-10	Q403	D-7	Q921	B-3
D704	I-23	IC301	H-17	Q904	D-6	Q923	B-2
D705	I-22	IC302	I-10	Q405	D-7	Q951	I-29
D706	I-22	IC350	B-12	Q406	C-5	Q952	E-30
D801	F-25	IC401	E-7	Q407	H-2		
D802	F-25	IC402	E-6	Q408	J-2		
D803	F-25	IC403	E-6	Q409	H-2		
D804	F-25	IC404	E-5	Q502	E-3		
D805	F-25	IC405	J-3	Q503	D-2		
D806	F-25	IC501	E-2	Q504	D-3		
D807	F-25	IC502	E-3	Q505	D-2		
D901	D-6	IC503	E-4	Q506	C-4		
D921	B-3	IC504	E-4	Q507	I-2		
D951	F-29	IC601	I-5	Q508	K-2		
D952	F-30	IC602	G-4	Q509	I-2		
D953	F-29	IC603	J-4	Q600	H-6		
D954	F-29	IC604	J-6	Q601	H-6		
D960	G-30	IC605	G-6	Q602	F-5		
D961	G-30	IC606	J-6	Q603	G-6		
D963	E-30	IC801	F-24	Q604	I-2		
D964	J-29	IC802	G-26	Q605	I-3		
D965	F-30	IC901	B-5	Q606	H-7		
D966	F-30	IC902	C-7	Q607	I-7		
D971	K-30	IC922	C-7	Q608	K-6		

3-3. PRINTED WIRING BOARDS

- Refer to page 10 for Semiconductor Location and page 22 for Semiconductor Lead Layouts.


【AUDIO BOARD】
1-641-772-
13
【HP BOARD】
AEP MODEL
UK,E MODEL
AEP MODEL
J451 PHONES
1-642-074-
【OPT BOARD】
IC280
1-641-807-
DIGITAL OUT OPTICAL
【VR BOARD】
RV350 LINE OUT PHONE LEVEL
IC350
CN351
CN350
VOL LED
VOL MOTOR
1-641-804-
11
【L.MOTOR BOARD】
M001 LOADING MOTOR
1-641-765-
【SW BOARD】
S001 IN SW
【BSL BOARD】
SPINDLE MOTOR
1-641-763-
12
OPTICAL PICK-UP BLOCK (KSS-272A)
【LINE OUT BOARD】
AEP MODEL
UK,E MODEL
VARIABLE
LINE OUT
FIXED
J401
1-641-808-
【BD BOARD】-SIDE B-
1-641-810-
【BD BOARD】-SIDE A-
1-641-810-
IC601
IC603
IC604
IC606
IC605
IC602
IC405
IC401
IC402
IC403
IC404
IC501
IC502
IC503
IC504
IC901
IC902
IC922
IC301
IC302
IC101
IC151
IC152
IC141
IC142
IC103
(CHASSIS)
BUS 901
BUS 903
BUS904
+12V
-12V
GND
RESET
EFM
M MUT
L MUT
NS SELECT

MC-Service

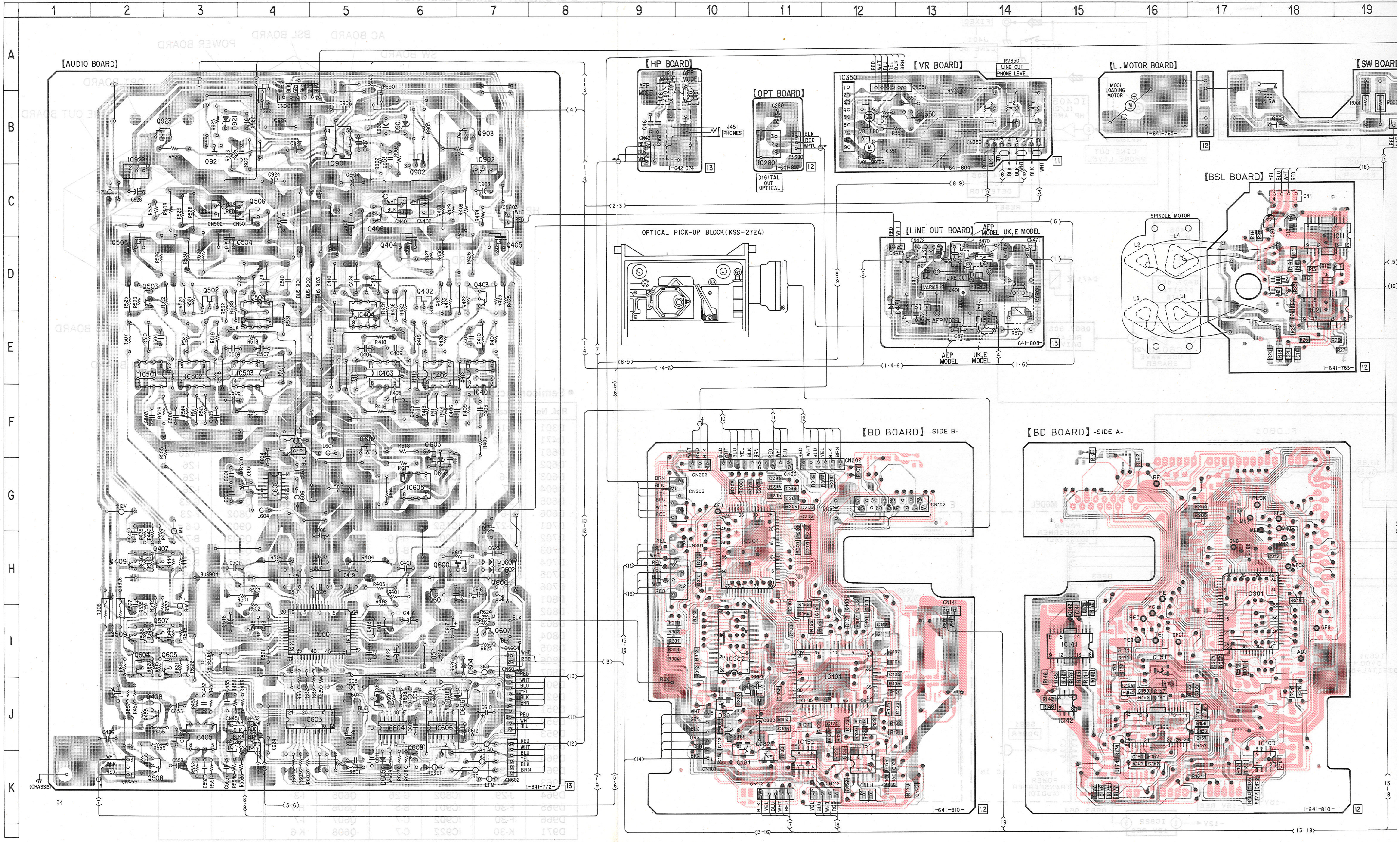

[SW BOARD]
S001 IN SW
S002 OUT SW
1-641-764-
SL BOARD]
1-641-763-
[DISPLAY BOARD]
FLD801 FLUORESCENT INDICATOR TUBE
TRACK
STEP
INDEX
MIN
DISC
SEC
PEAK
A.CUE
AUTO SPACE
SINGLEMULTI REPEAT 1A-B
CUSTOM FILE
MEMO INDEX BANK LEVEL
LINK EDIT
TIME FADE
S801 OPEN/CLOSE
S802 LEVEL FILE
IC801
IC802
1-637-410-
[TIMER BOARD]
S804 TIMER
PLAY OFF
CN807
1-637-411-
[FUNCTION BOARD]
PLAY MODE
S704 C.INDEX
S703 PROGRAM
S702 SHUFFLE
S701 CONTINUE
S718 DISPLAY MODE
S708 P.SEARCH
S719 EDIT/TIME FADE
S716 ERASE
S713 FILE
S717 FILE RECALL
S711 REPEAT
DIMMER
S714 TIME/MEMO
1-637-409-
[AC BOARD]
E MODEL
AEP,UK MODEL
1-641-809-
AC IN
S991 POWER
[POWER BOARD]
AEP MODEL
1-641-806-
(CHASSIS)
AEP,UK MODEL
T902 POWER TRANSFORMER (AUDIO)
T901 POWER TRANSFORMER (DIGITAL)
E MODEL
VS901 VOLTAGE SELECTOR
T901 POWER TRANSFORMER
240V
220V
110V
120V
IC301
IC103
1-641-810-

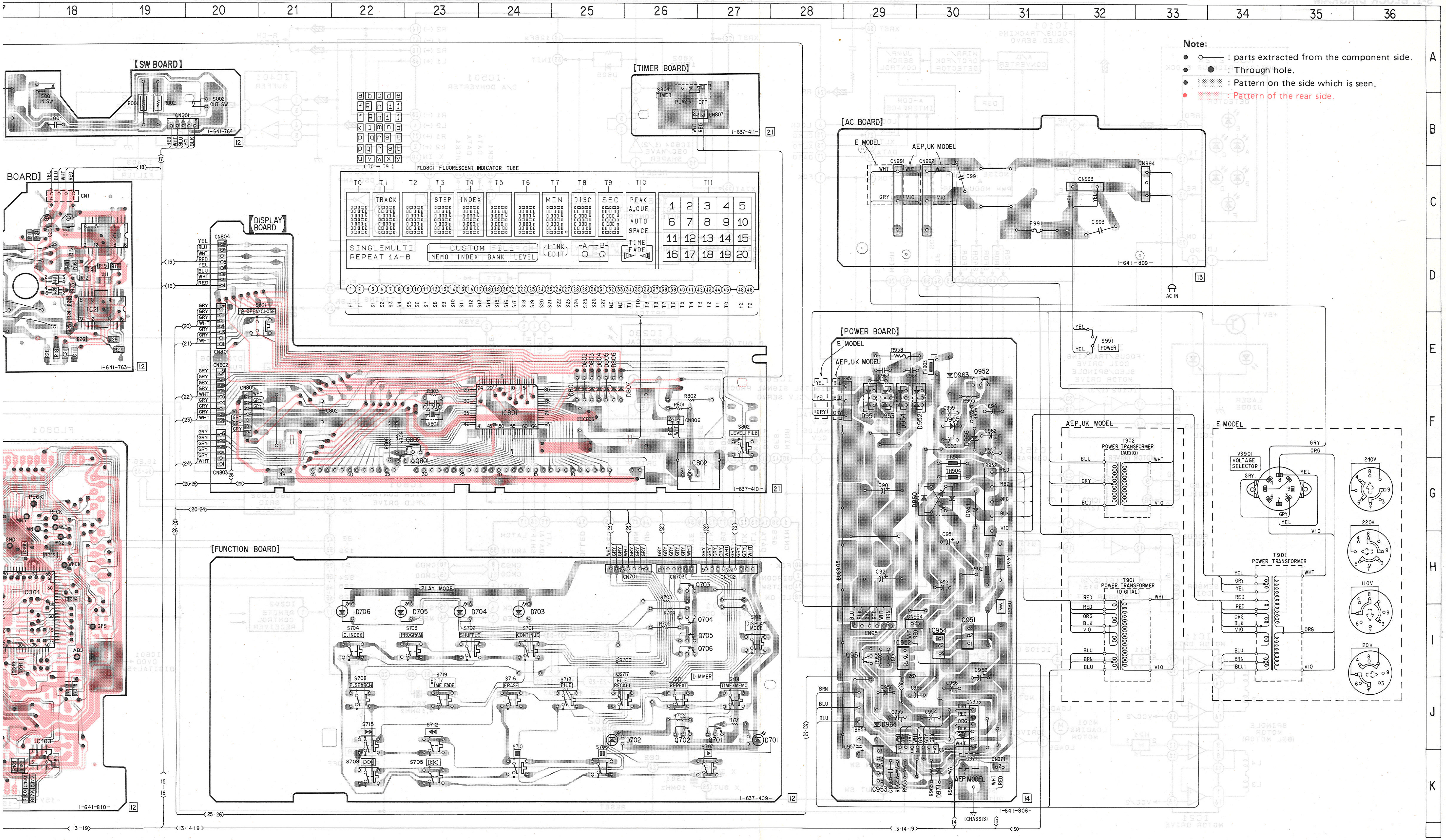
Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

3-3. PRINTED WIRING BOARDS

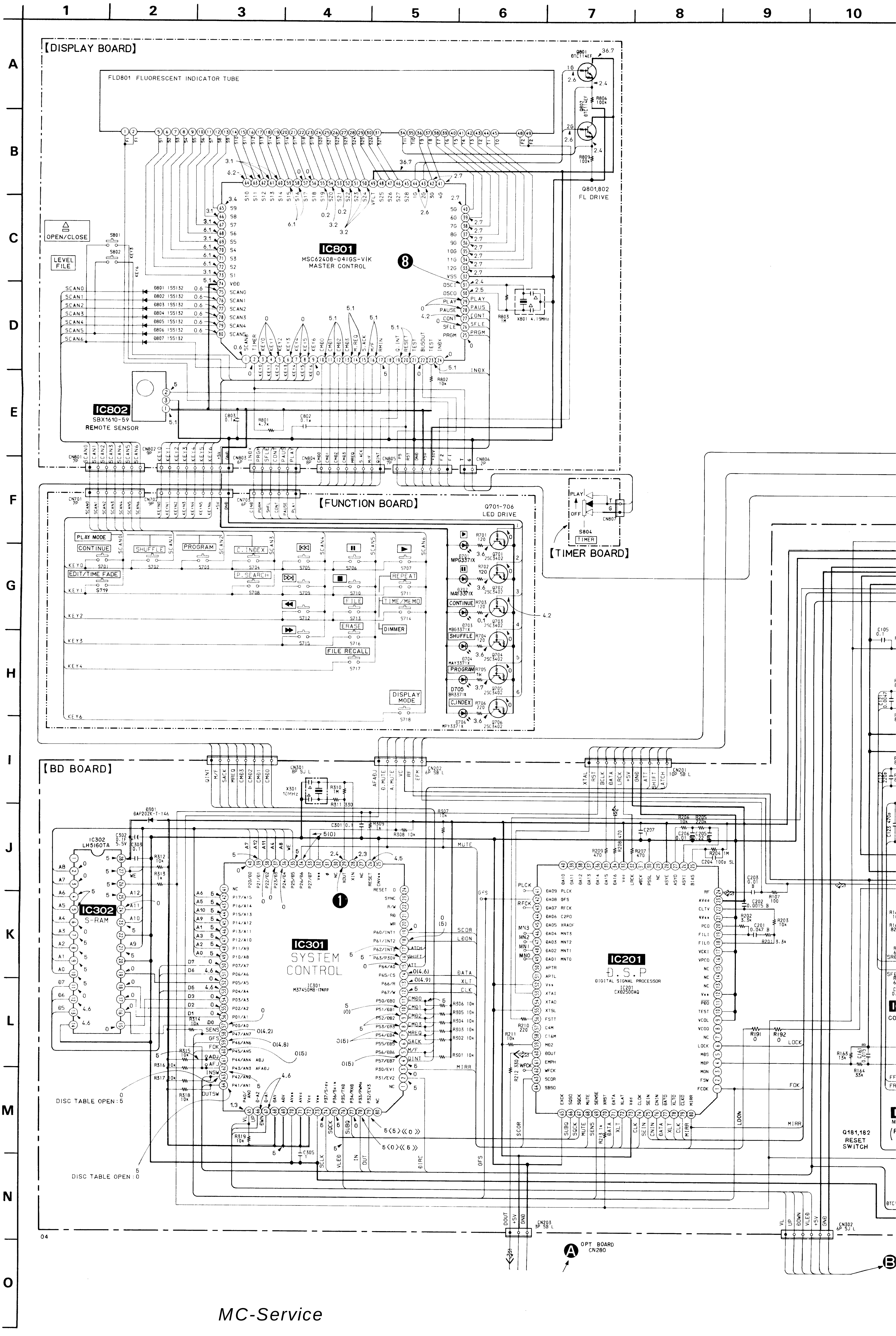
● Refer to page 10 for Semiconductor Location and page 22 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
H
I
J
K
[AUDIO BOARD]
1-641-772-
[HP BOARD]
J451 PHONES
1-642-074-
[OPT BOARD]
DIGITAL OUT OPTICAL
1-641-807-
[VR BOARD]
RV350 LINE OUT PHONE LEVEL
1-641-804-
[L.MOTOR BOARD]
M001 LOADING MOTOR
1-641-765-
[SW BOARD]
S001 IN SW
[BSL BOARD]
SPINDLE MOTOR
1-641-763-
OPTICAL PICK-UP BLOCK (KSS-272A)
[LINE OUT BOARD]
AEP MODEL
UK,E MODEL
1-641-808-
[BD BOARD] -SIDE B-
1-641-810-
[BD BOARD] -SIDE A-
1-641-810-
(CHASSIS)

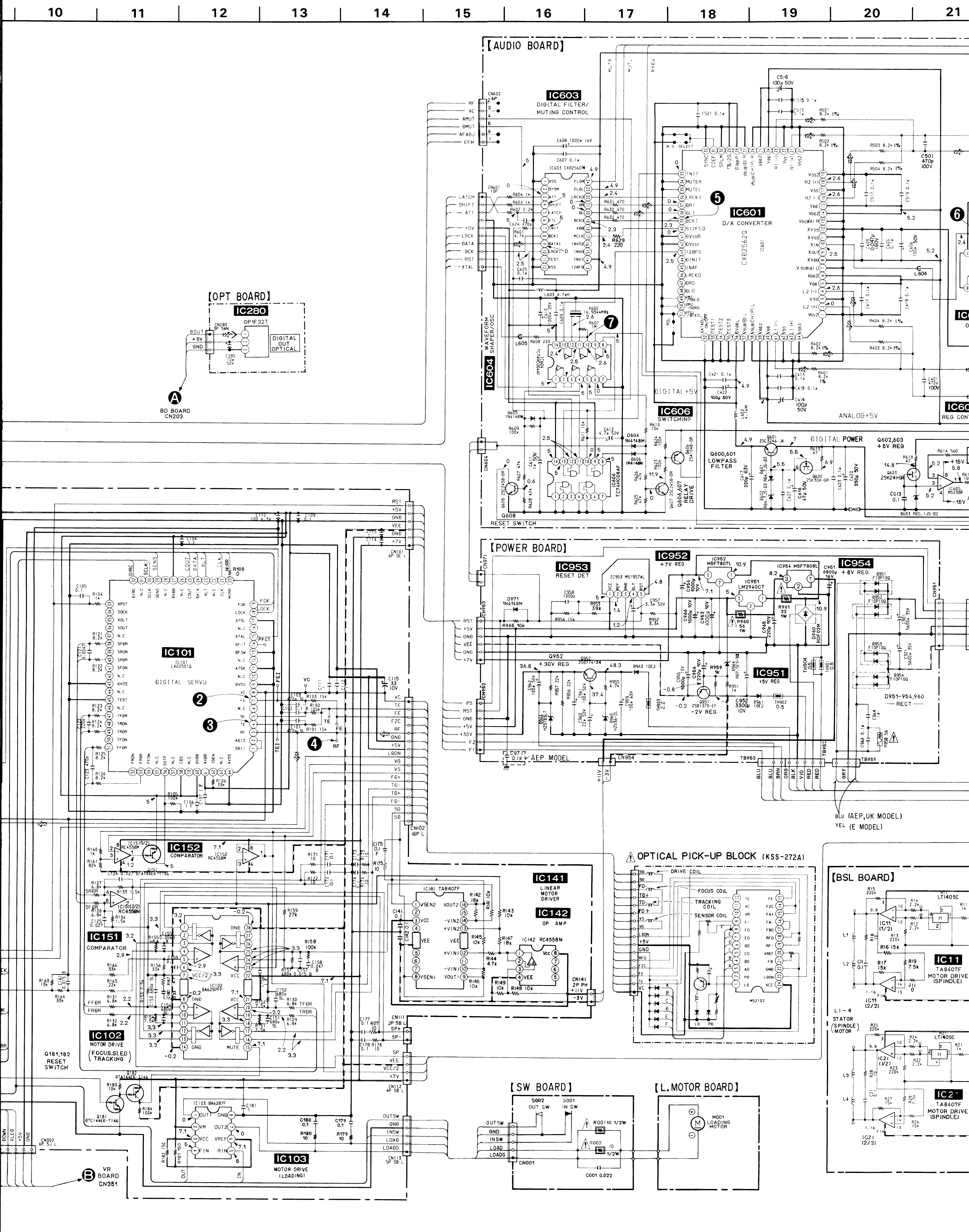

[SW BOARD]
S001 IN SW
S002 OUT SW
CN001
1-641-764-
12
BOARD]
1-641-763-
[DISPLAY BOARD]
FL0801 FLUORESCENT INDICATOR TUBE
TRACK
STEP
INDEX
MIN
DISC
SEC
PEAK
A.CUE
AUTO
SPACE
TIME
FADE
SINGLEMULTI
REPEAT 1A-B
CUSTOM FILE
MEMO
INDEX
BANK
LEVEL
LINK
EDIT
S801 OPEN/CLOSE
IC801
IC802
S802 LEVEL FILE
1-637-410-
21
[TIMER BOARD]
S804 TIMER
PLAY
OFF
CN807
1-637-411-
[FUNCTION BOARD]
PLAY MODE
S704 C.INDEX
S703 PROGRAM
S702 SHUFFLE
S701 CONTINUE
S718 DISPLAY MODE
S708 P.SEARCH
S719 EDIT/TIME FADE
S716 ERASE
S713 FILE
S717 FILE RECALL
S711 REPEAT
DIMMER
S714 TIME/MEMO
S715
S712
S710
S706
S707
S703
S705
1-637-409-
12
1-641-810-
12
[AC BOARD]
E MODEL
AEP,UK MODEL
CN991
CN992
CN993
CN994
C991
F991
C993
1-641-809-
13
AC IN
S991 POWER
[POWER BOARD]
E MODEL
AEP,UK MODEL
IC951
IC952
IC953
IC954
AEP MODEL
1-641-806-
14
(CHASSIS)
AEP,UK MODEL
T902 POWER TRANSFORMER (AUDIO)
T901 POWER TRANSFORMER (DIGITAL)
E MODEL
VS901 VOLTAGE SELECTOR
T901 POWER TRANSFORMER
240V
220V
110V
120V
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36
A B C D E F G H I J K

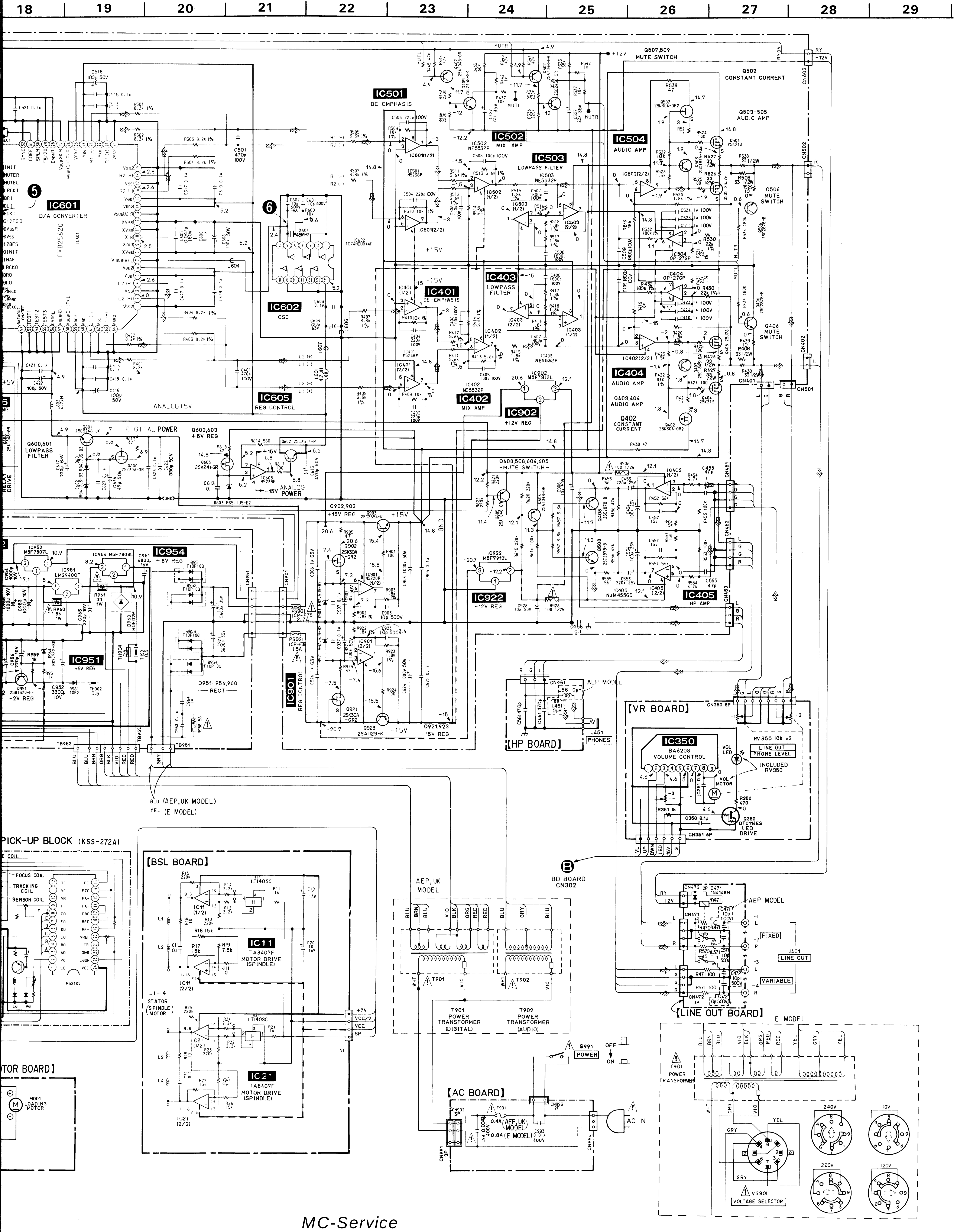
Note:
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

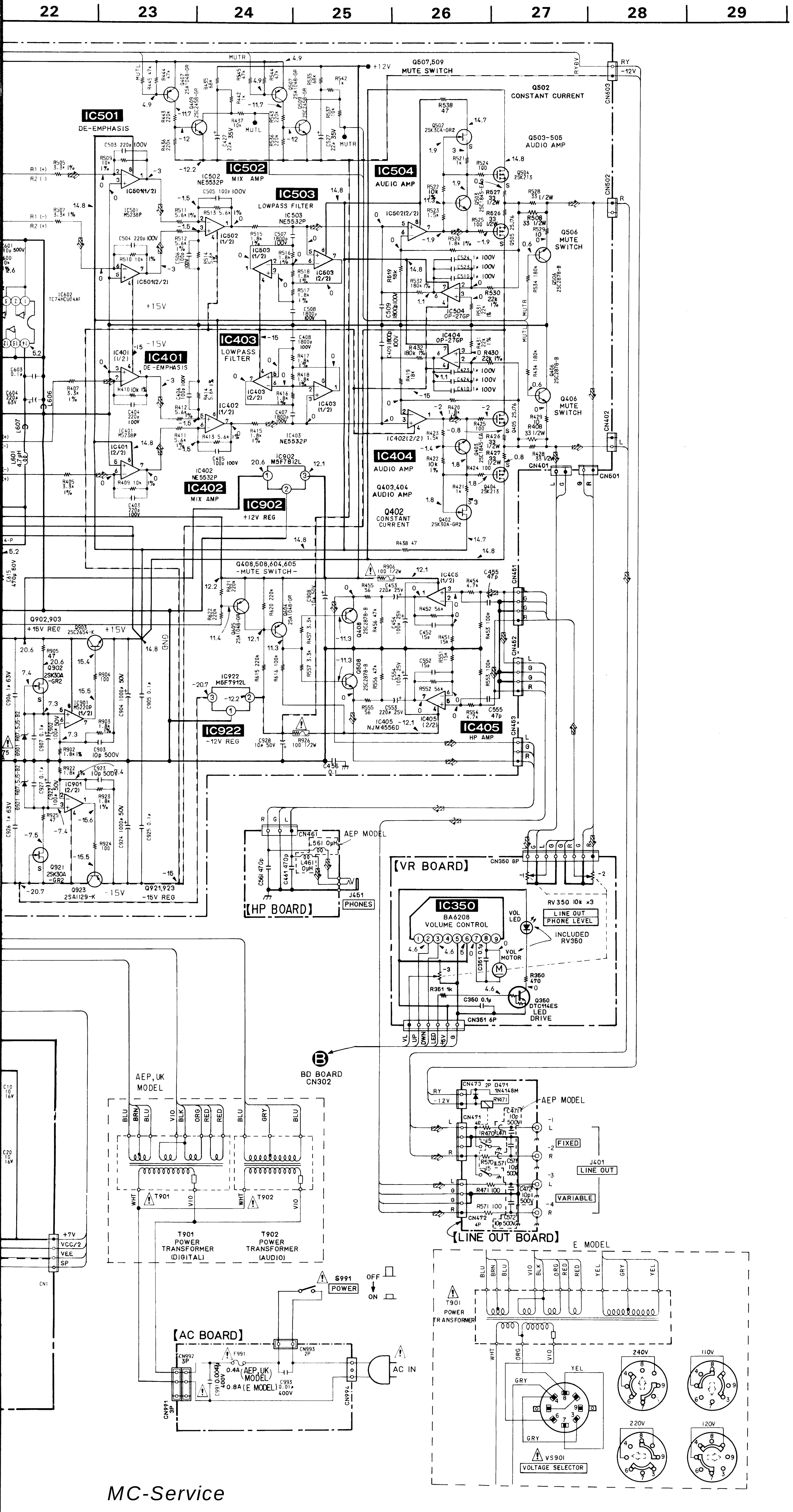
3-4. SCHEMATIC DIAGRAM • Refer to page 20 for IC Block Diagrams.



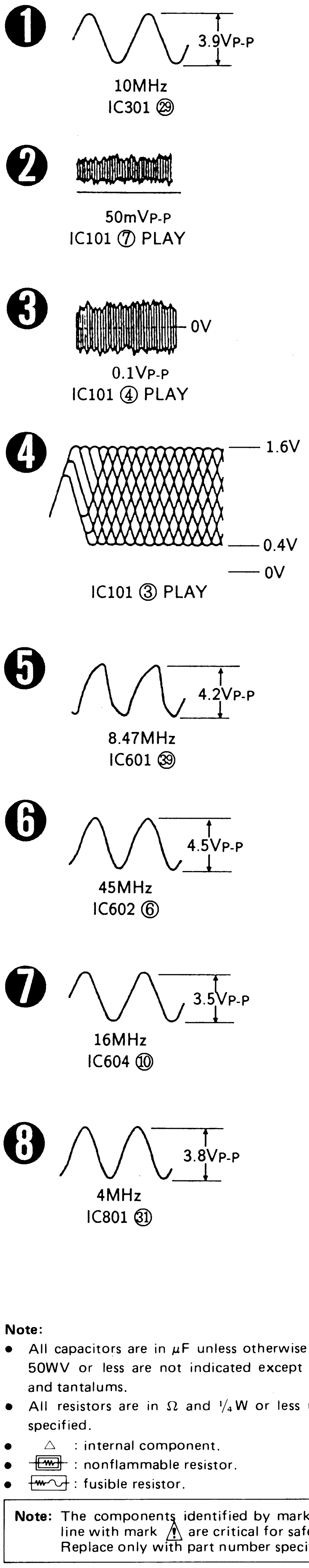
1 2 3 4 5 6 7 8 9 10
A B C D E F G H I J K L M N O
[DISPLAY BOARD]
FLD801 FLUORESCENT INDICATOR TUBE
Q801,802 FL DRIVE
IC801
MSC62408-041GS-VIK
MASTER CONTROL
8
OPEN/CLOSE
LEVEL FILE
S801
S802
D801 1SS132
D802 1SS132
D803 1SS132
D804 1SS132
D805 1SS132
D806 1SS132
D807 1SS132
X801 4.19MHz
IC802
SBX1610-59
REMOTE SENSOR
CN801 7P
CN802 9P
CN803 6P
CN804 8P
CN805 7P
CN806 2P
[FUNCTION BOARD]
Q701-706 LED DRIVE
PLAY MODE
CONTINUE
SHUFFLE
PROGRAM
C.INDEX
EDIT/TIME FADE
P.SEARCH
REPEAT
FILE
TIME/MEMO
ERASE
DIMMER
FILE RECALL
DISPLAY MODE
PLAY
OFF
S804
TIMER
[TIMER BOARD]
CN807
[BD BOARD]
CN301 8P SJ L
X301 10MHz
CN202 6P SB L
CN201 10P SB L
D301 8AP202K-T-14A
IC302
LH5160TA
S-RAM
IC301
SYSTEM CONTROL
M37450M8-174FF
1
IC201
D.S.P
DIGITAL SIGNAL PROCESSOR
CXD2500AQ
DISC TABLE OPEN : 5
DISC TABLE OPEN : 0
CN203 3P SB L
CN302 6P SJ L
A
OPT BOARD CN280
B
Q181,182 RESET SWITCH


10
11
12
13
14
15
16
17
18
19
20
21
【AUDIO BOARD】
IC603 DIGITAL FILTER/ MUTING CONTROL
IC601 D/A CONVERTER
IC604 WAVEFORM SHAPER/OSC
IC606 SWITCHING
Q600,601 LOWPASS FILTER
Q607 RELAY DRIVE
Q608 RESET SWITCH
DIGITAL POWER
Q602,603 +5V REG
ANALOG+5V
DIGITAL+5V
【OPT BOARD】
IC280 GP1F32T
DIGITAL OUT OPTICAL
BD BOARD CN203
IC101 DIGITAL SERVO
IC152 COMPARATOR
IC151 COMPARATOR
IC102 MOTOR DRIVE (FOCUS,SLED TRACKING)
IC141 LINEAR MOTOR DRIVER
IC142 OP AMP
IC103 MOTOR DRIVE (LOADING)
Q181,182 RESET SWITCH
VR BOARD CN351
【POWER BOARD】
IC953 RESET DET
IC952 +7V REG
IC954 +8V REG
IC951 +5V REG
Q952 +30V REG
Q951 -2V REG
D951-954,960 —RECT—
AEP MODEL
BLU (AEP,UK MODEL)
YEL (E MODEL)
OPTICAL PICK-UP BLOCK (KSS-272A)
DRIVE COIL
FOCUS COIL
TRACKING COIL
SENSOR COIL
【BSL BOARD】
IC11 TA8407F MOTOR DRIVE (SPINDLE)
IC21 TA8407F MOTOR DRIVE (SPINDLE)
STATOR (SPINDLE) MOTOR
【SW BOARD】
S002 OUT SW
S001 IN SW
【L.MOTOR BOARD】
M001 LOADING MOTOR


18
19
20
21
22
23
24
25
26
27
28
29
IC601
D/A CONVERTER
CXD2562Q
IC602
OSC
IC605
REG CONTROL
IC501
DE-EMPHASIS
IC502
MIX AMP
IC503
LOWPASS FILTER
IC504
AUDIO AMP
IC401
DE-EMPHASIS
IC402
MIX AMP
IC403
LOWPASS FILTER
IC404
AUDIO AMP
IC405
HP AMP
NJM4556D
IC902
+12V REG
IC922
-12V REG
IC901
REG CONTROL
Q507,509
MUTE SWITCH
Q502
CONSTANT CURRENT
Q503-505
AUDIO AMP
Q506
MUTE SWITCH
Q406
MUTE SWITCH
Q403,404
AUDIO AMP
Q402
CONSTANT CURRENT
Q408,508,604,605
-MUTE SWITCH-
Q600,601
LOWPASS FILTER
DIGITAL POWER
Q602,603
+6V REG
ANALOG POWER
ANALOG+5V
Q902,903
+15V REG
Q921,923
-15V REG
IC954
+8V REG
IC951
+5V REG
Q951
-2V REG
D951-954,960
RECT
BLU (AEP,UK MODEL)
YEL (E MODEL)
PICK-UP BLOCK (KSS-272A)
FOCUS COIL
TRACKING COIL
SENSOR COIL
[BSL BOARD]
IC11
TA8407F
MOTOR DRIVE
(SPINDLE)
IC21
TA8407F
MOTOR DRIVE
(SPINDLE)
L1-4
STATOR
(SPINDLE)
(MOTOR)
TOR BOARD]
M001
LOADING MOTOR
AEP,UK MODEL
T901
POWER TRANSFORMER
(DIGITAL)
T902
POWER TRANSFORMER
(AUDIO)
S991
POWER
OFF
ON
[AC BOARD]
F991
0.4A (AEP,UK MODEL)
0.8A (E MODEL)
AC IN
[HP BOARD]
AEP MODEL
J451
PHONES
[VR BOARD]
IC350
BA6208
VOLUME CONTROL
VOL LED
VOL MOTOR
RV350 10k x3
LINE OUT
PHONE LEVEL
INCLUDED RV350
Q350
DTC114ES
LED DRIVE
B
BD BOARD
CN302
[LINE OUT BOARD]
AEP MODEL
FIXED
J401
LINE OUT
VARIABLE
E MODEL
T901
POWER TRANSFORMER
240V
110V
220V
120V
VS901
VOLTAGE SELECTOR


22
23
24
25
26
27
28
29
IC501
DE-EMPHASIS
IC502
MIX AMP
IC503
LOWPASS FILTER
IC504
AUDIO AMP
Q507,509
MUTE SWITCH
Q502
CONSTANT CURRENT
Q503-505
AUDIO AMP
Q506
MUTE SWITCH
IC401
DE-EMPHASIS
IC403
LOWPASS FILTER
IC402
MIX AMP
IC404
AUDIO AMP
Q403,404
AUDIO AMP
Q402
CONSTANT CURRENT
Q406
MUTE SWITCH
IC902
+12V REG
IC922
-12V REG
Q408,508,604,605
-MUTE SWITCH-
IC405
HP AMP
Q902,903
+15V REG
Q921,923
-15V REG
CN601
CN603
CN502
CN402
CN401
CN451
CN452
CN453
[HP BOARD]
J451
PHONES
AEP MODEL
[VR BOARD]
CN350 8P
IC350
BA6208
VOLUME CONTROL
RV350 10k ×3
LINE OUT
PHONE LEVEL
INCLUDED RV350
VOL LED
VOL MOTOR
Q350
DTC114ES
LED DRIVE
CN351 6P
BD BOARD
CN302
AEP,UK MODEL
T901
POWER TRANSFORMER (DIGITAL)
T902
POWER TRANSFORMER (AUDIO)
S991
POWER
OFF
ON
[AC BOARD]
CN992 3P
CN993 2P
CN991 3P
CN994
F991
0.4A (AEP,UK MODEL)
0.8A (E MODEL)
AC IN
[LINE OUT BOARD]
CN473 2P
CN471
CN472 4P
D471 1N4148M
FIXED
VARIABLE
J401
LINE OUT
E MODEL
T901
POWER TRANSFORMER
VS901
VOLTAGE SELECTOR
240V
110V
220V
120V
CN1

- **Waveforms**



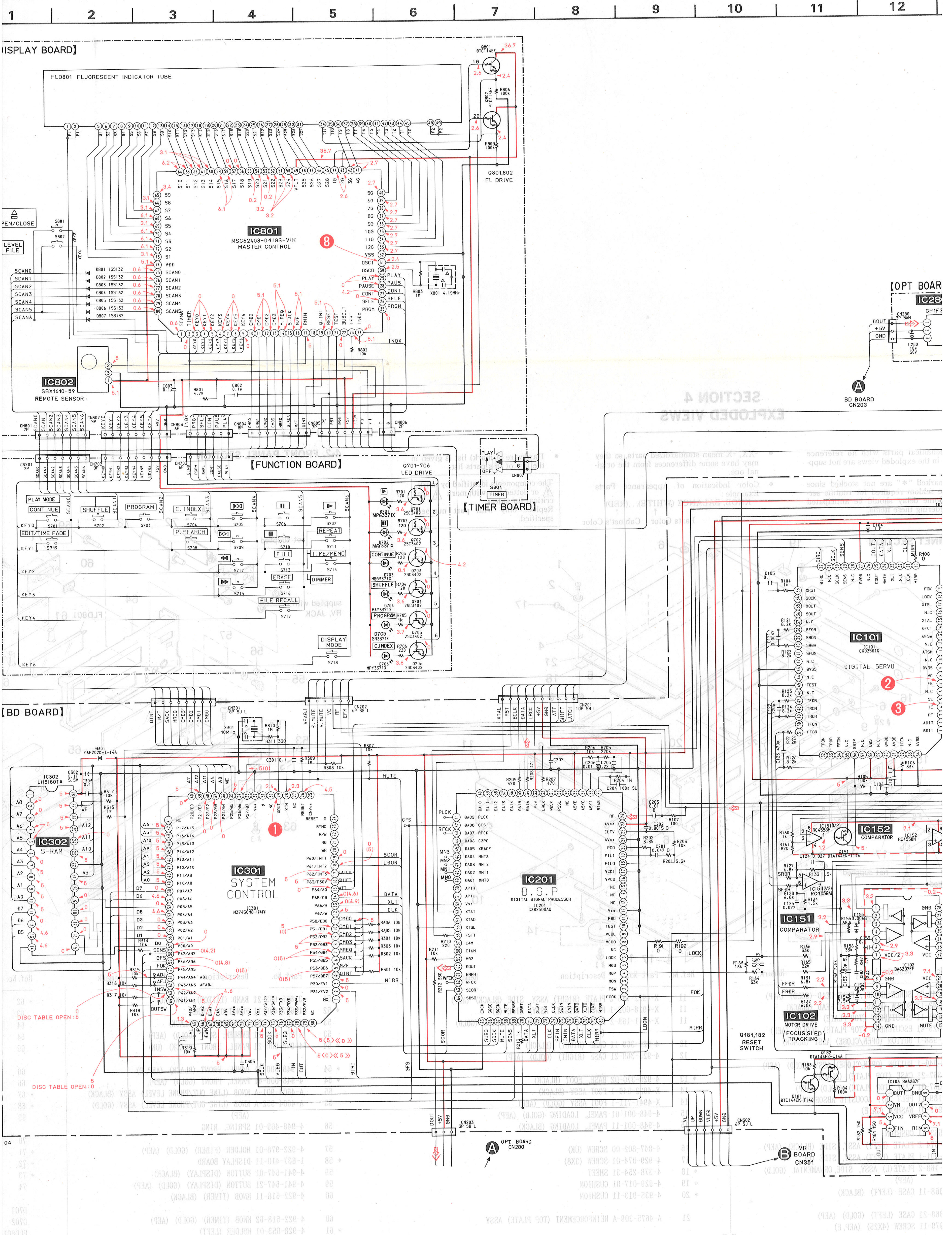
Note:

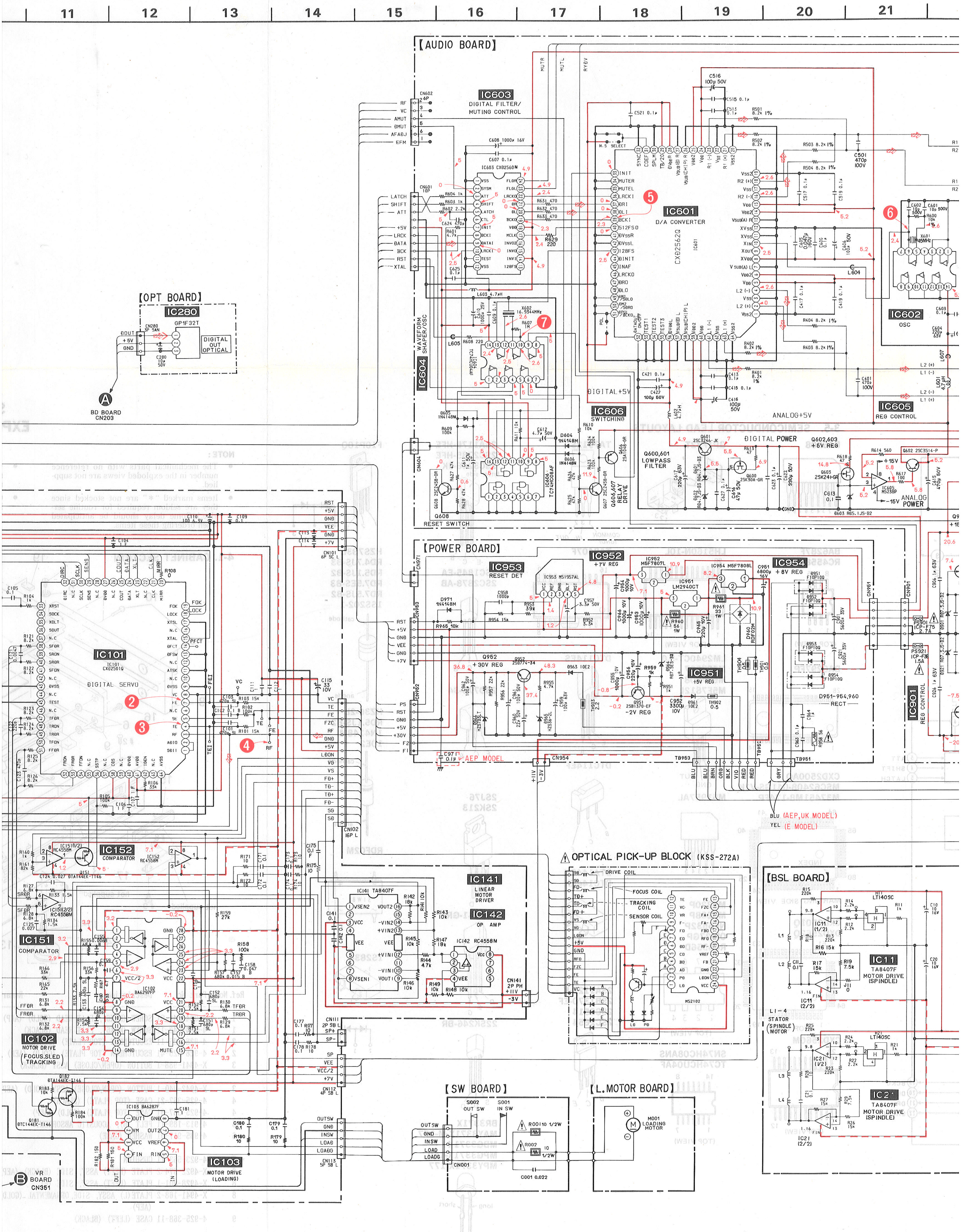
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

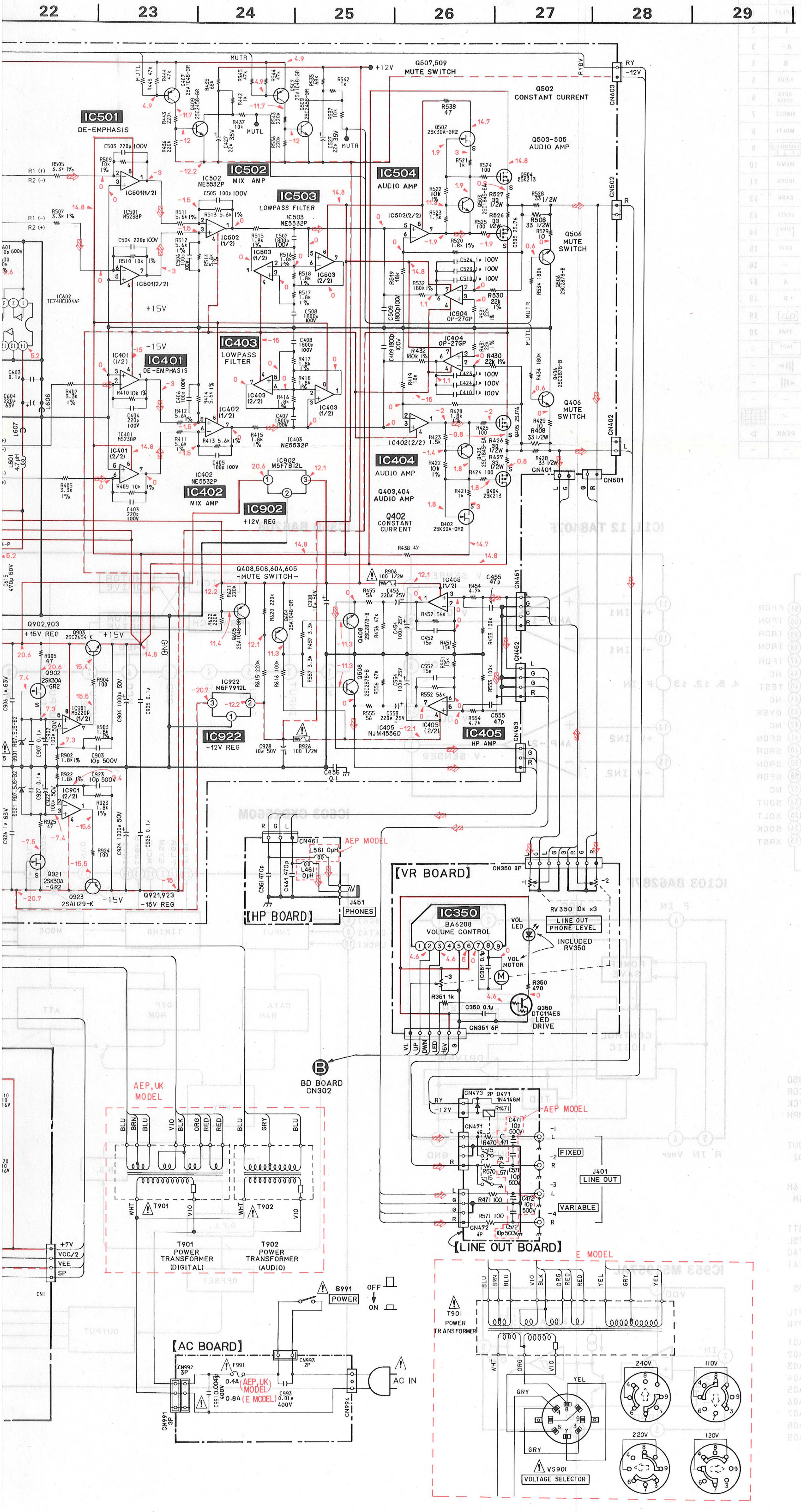
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- ━━ : B+ Line
- ▬ ▬ : B– Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : PLAY
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇨ : digital out

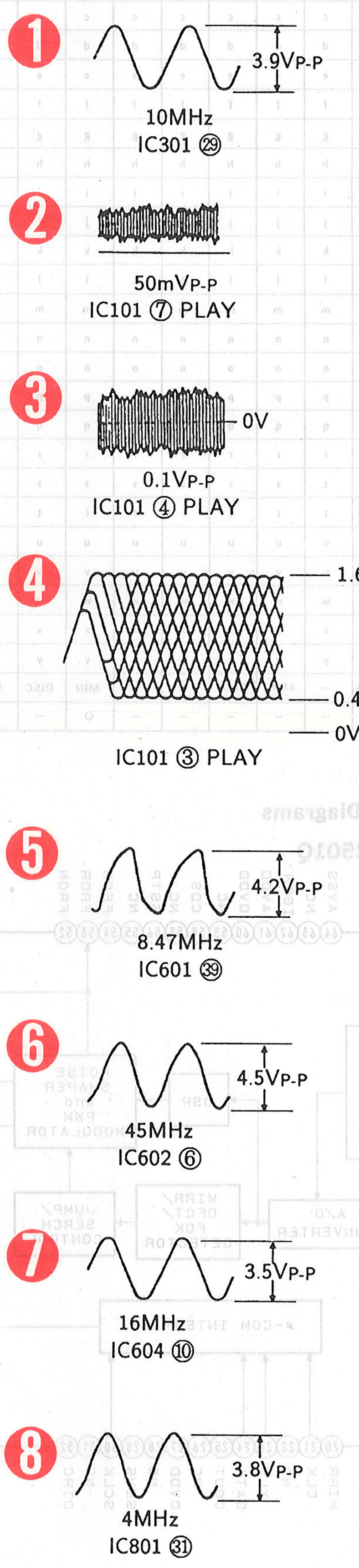
CHEMATIC DIAGRAM ● Refer to page 20 for IC Block Diagrams.


1
2
3
4
5
6
7
8
9
10
11
12
ISPLAY BOARD]
FLD801 FLUORESCENT INDICATOR TUBE
Q801 DTC114EF
Q802 DTC114EF
Q801,802 FL DRIVE
IC801
MSC62408-041GS-VIK
MASTER CONTROL
X801 4.19MHz
IC802
SBX1610-59
REMOTE SENSOR
PEN/CLOSE
LEVEL FILE
S801
S802
[FUNCTION BOARD]
Q701-706 LED DRIVE
PLAY MODE
CONTINUE
SHUFFLE
PROGRAM
C.INDEX
P.SEARCH
EDIT/TIME FADE
REPEAT
TIME/MEMO
FILE
ERASE
DIMMER
FILE RECALL
DISPLAY MODE
[TIMER BOARD]
PLAY
OFF
TIMER
S804
[OPT BOAR
IC28
BD BOARD CN203
[BD BOARD]
IC302
LH5160TA
S-RAM
X301 10MHz
IC301
SYSTEM CONTROL
M37450M8-174FP
IC201
D.S.P
DIGITAL SIGNAL PROCESSOR
CXD2500AQ
IC101
CXD2501Q
DIGITAL SERVO
IC151
COMPARATOR
IC152
COMPARATOR
IC102
MOTOR DRIVE
(FOCUS,SLED)
TRACKING
Q181,182
RESET SWITCH
IC103 BA6287F
OPT BOARD CN280
B BOARD CN351
DISC TABLE OPEN : 5
DISC TABLE OPEN : 0
1
2
3
8


11
12
13
14
15
16
17
18
19
20
21
【AUDIO BOARD】
IC603
DIGITAL FILTER/ MUTING CONTROL
IC603 CXD2560M
IC601
D/A CONVERTER
CXD2562Q
IC602
OSC
IC604
WAVEFORM SHAPER/OSC
IC606
SWITCHING
IC605
REG CONTROL
DIGITAL+5V
ANALOG+5V
DIGITAL POWER
Q600,601 LOWPASS FILTER
Q602,603 +6V REG
ANALOG POWER
Q606,607 RELAY DRIVE
Q608 RESET SWITCH
【OPT BOARD】
IC280
GP1F32T
DIGITAL OUT OPTICAL
BD BOARD CN203
【POWER BOARD】
IC953
RESET DET
IC952
+7V REG
IC954
+8V REG
IC951
+5V REG
Q952 +30V REG
Q951 2SB1370-EF -2V REG
D951-954,960 RECT
IC901
REG CONTROL
AEP MODEL
BLU (AEP,UK MODEL)
YEL (E MODEL)
IC101
CXD2501Q
DIGITAL SERVO
IC152
COMPARATOR
IC151
COMPARATOR
IC102
MOTOR DRIVE (FOCUS,SLED TRACKING)
IC141
LINEAR MOTOR DRIVER
IC141 TA8407F
IC142
OP AMP
IC142 RC4558M
IC103
MOTOR DRIVE (LOADING)
IC103 BA6287F
VR BOARD CN351
OPTICAL PICK-UP BLOCK (KSS-272A)
DRIVE COIL
FOCUS COIL
TRACKING COIL
SENSOR COIL
【BSL BOARD】
IC11
TA8407F MOTOR DRIVE (SPINDLE)
IC21
TA8407F MOTOR DRIVE (SPINDLE)
L1-4 STATOR (SPINDLE) MOTOR
【SW BOARD】
S002 OUT SW
S001 IN SW
【L.MOTOR BOARD】
M001 LOADING MOTOR
①
②
③
④
⑤
⑥
⑦


22
23
24
25
26
27
28
29
IC501
DE-EMPHASIS
IC502
MIX AMP
IC503
LOWPASS FILTER
IC504
AUDIO AMP
Q507,509
MUTE SWITCH
Q502
CONSTANT CURRENT
Q503-505
AUDIO AMP
Q506
MUTE SWITCH
IC401
DE-EMPHASIS
IC403
LOWPASS FILTER
IC404
AUDIO AMP
Q406
MUTE SWITCH
IC402
MIX AMP
IC902
+12V REG
Q403,404
AUDIO AMP
Q402
CONSTANT CURRENT
Q408,508,604,605
-MUTE SWITCH-
IC922
-12V REG
IC405
HP AMP
Q902,903
+15V REG
Q921,923
-15V REG
+15V
-15V
+12V
-12V
CN601
CN401
CN402
CN502
CN603
CN451
CN452
CN453
[HP BOARD]
CN461
L561 0μH
L461 0μH
J461
PHONES
AEP MODEL
[VR BOARD]
CN350 8P
IC350
BA6208
VOLUME CONTROL
VOL LED
VOL MOTOR
RV350 10k ×3
LINE OUT
PHONE LEVEL
INCLUDED RV350
R350 470
Q350
DTC114ES
LED DRIVE
CN351 6P
BD BOARD
CN302
CN473 2P
D471 1N4148M
CN471
CN472
J401
FIXED
LINE OUT
VARIABLE
[LINE OUT BOARD]
AEP MODEL
AEP, UK MODEL
T901
POWER TRANSFORMER
(DIGITAL)
T902
POWER TRANSFORMER
(AUDIO)
+7V
VCC/2
VEE
SP
CN1
S991
POWER
OFF
ON
[AC BOARD]
CN992 3P
F991
0.4A (AEP, UK MODEL)
0.8A (E MODEL)
CN993 2P
AC IN
CN991 3P
CN994
E MODEL
T901
POWER TRANSFORMER
VS901
VOLTAGE SELECTOR
240V
110V
220V
120V

● **Waveforms**



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

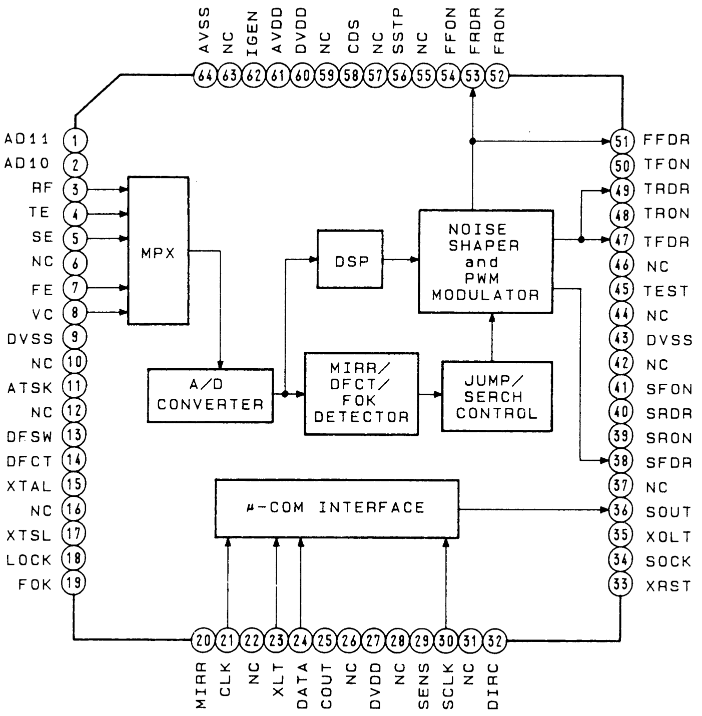
- ▬▬ : B+ Line
- ▬ ▬ ▬ : B– Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
  ( ) : PLAY
- Voltages are taken with a VOM (Input Impedance 10MΩ).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇨⇨ : digital out

• Display Panel Terminal (FLD801)

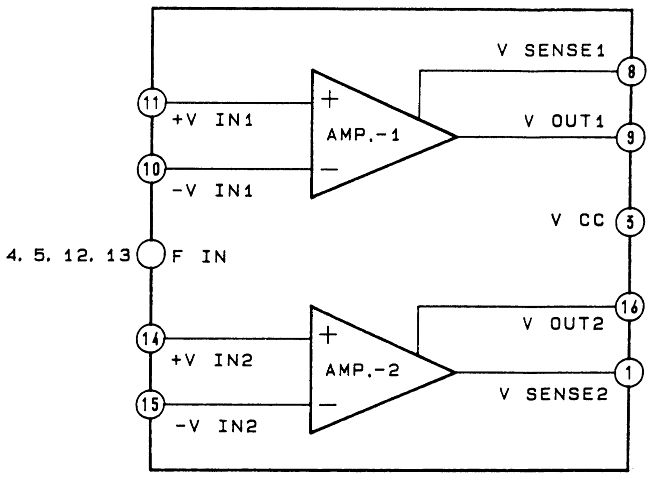
	T0	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11
S1	a	a	a	a	a	a	a	a	a	a	REPEAT	1
S2	b	b	b	b	b	b	b	b	b	b	1	2
S3	c	c	c	c	c	c	c	c	c	c	A –	3
S4	d	d	d	d	d	d	d	d	d	d	B	4
S5	e	e	e	e	e	e	e	e	e	e	A.CUE	5
S6	f	f	f	f	f	f	f	f	f	f	AUTO SPACE	6
S7	g	g	g	g	g	g	g	g	g	g	SINGLE	7
S8	h	h	h	h	h	h	h	h	h	h	MULTI	8
S9	i	i	i	i	i	i	i	i	i	i	CUSTOM FILE	9
S10	j	j	j	j	j	j	j	j	j	j	MEMO	10
S11	k	k	k	k	k	k	k	k	k	k	INDEX	11
S12	l	l	l	l	l	l	l	l	l	l	BANK	12
S13	m	m	m	m	m	m	m	m	m	m	LEVEL	13
S14	n	n	n	n	n	n	n	n	n	n	[LINK]	14
S15	o	o	o	o	o	o	o	o	o	o	EDIT	15
S16	p	p	p	p	p	p	p	p	p	p	–	16
S17	q	q	q	q	q	q	q	q	q	q	A	17
S18	r	r	r	r	r	r	r	r	r	r	B	18
S19	s	s	s	s	s	s	s	s	s	s	[oo]	19
S20	t	t	t	t	t	t	t	t	t	t	TIME	20
S21	u	u	u	u	u	u	u	u	u	u	FADE	–
S22	v	v	v	v	v	v	v	v	v	v	|||►	–
S23	w	w	w	w	w	w	w	w	w	w	◄|||	–
S24	x	x	x	x	x	x	x	x	x	x	–	–
S25	y	y	y	y	y	y	y	y	y	y	–	▦
S26	–	TRACK	–	STEP	INDEX	–	–	MIN	DISC	SEC	PEAK	▷
S27	–	–	–	–	–	–	–	○	–	–	–	–

• IC Block Diagrams

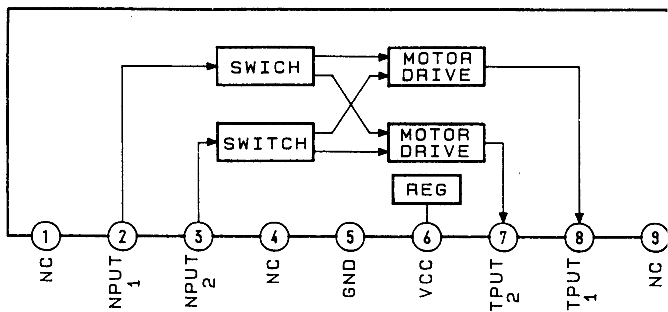
IC101 CXD2501Q


AVSS
NC
IGEN
AVDD
DVDD
NC
CDS
NC
SSTP
NC
FFON
FRDR
FRON
AD11
AD10
RF
TE
SE
NC
FE
VC
DVSS
NC
ATSK
NC
DFSW
DFCT
XTAL
NC
XTSL
LOCK
FOK
MPX
DSP
NOISE SHAPER and PWM MODULATOR
A/D CONVERTER
MIRR/ DFCT/ FOK DETECTOR
JUMP/ SERCH CONTROL
μ-COM INTERFACE
FFDR
TFON
TRDR
TRON
TFDR
NC
TEST
NC
DVSS
NC
SFON
SRDR
SRON
SFDR
NC
SOUT
XOLT
SOCK
XRST
MIRR
CLK
NC
XLT
DATA
COUT
NC
DVDD
NC
SENS
SCLK
NC
DIRC

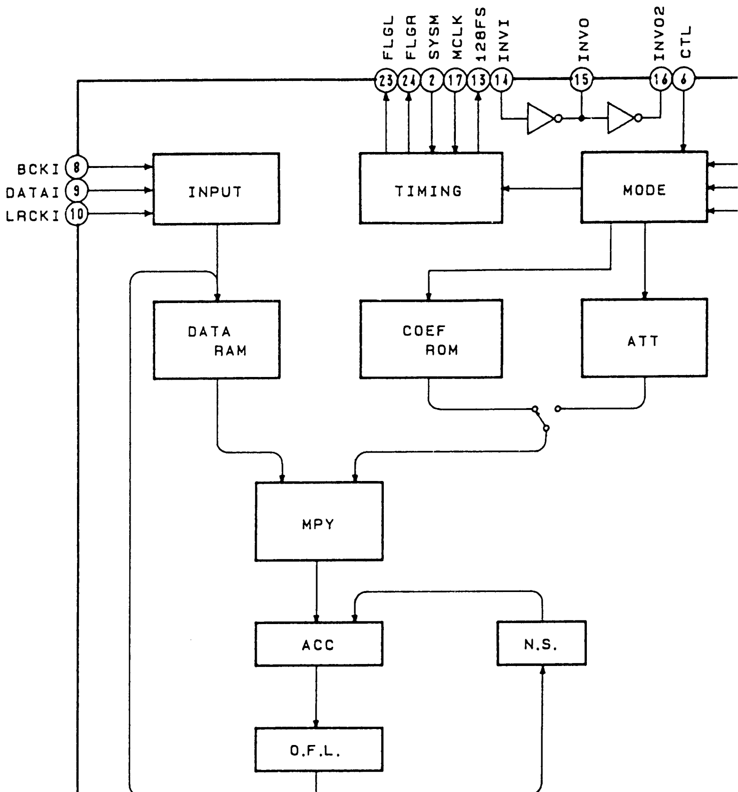
IC11, 12 TA8407F


V SENSE1
+V IN1
AMP.-1
V OUT1
-V IN1
V CC
4. 5. 12. 13
F IN
+V IN2
AMP.-2
V OUT2
-V IN2
V SENSE2
+
–

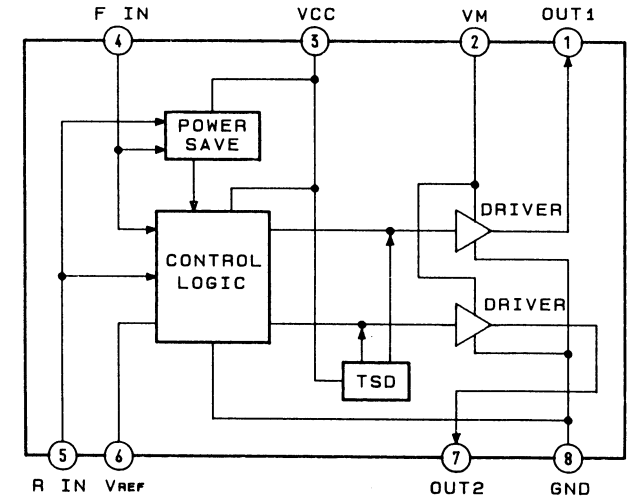
IC350 BA6208


SWICH
SWITCH
MOTOR DRIVE
MOTOR DRIVE
REG
NC
INPUT 1
INPUT 2
NC
GND
VCC
OUTPUT 2
OUTPUT 1
NC

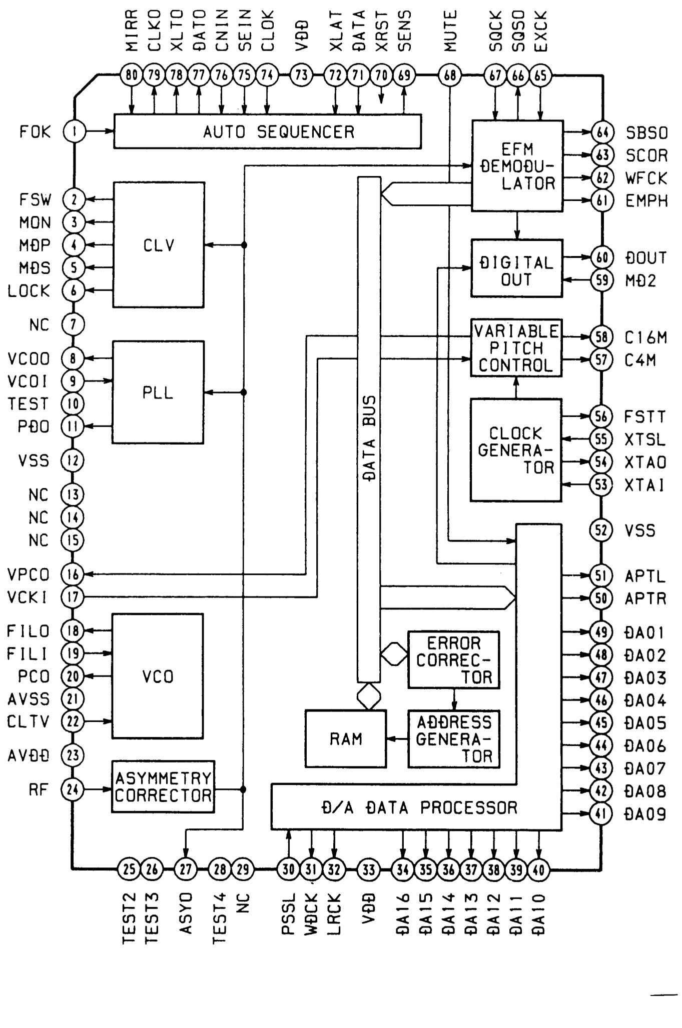
IC603 CXD2560M


FLGL
FLGR
SYSM
MCLK
128FS
INVI
INVO
INVO2
CTL
BCKI
DATAI
LRCKI
INPUT
TIMING
MODE
DATA RAM
COEF ROM
ATT
MPY
ACC
N.S.
O.F.L.
OFFSET
OUTPUT

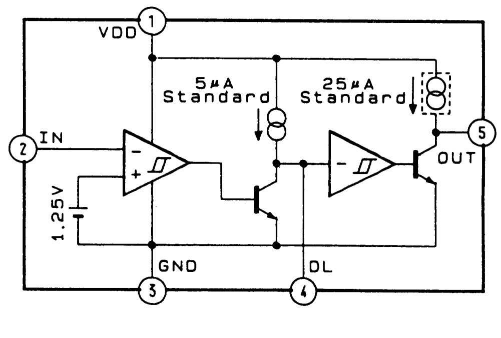
IC103 BA6287F


F IN
VCC
VM
OUT1
POWER SAVE
CONTROL LOGIC
DRIVER
DRIVER
TSD
R IN
VREF
OUT2
GND

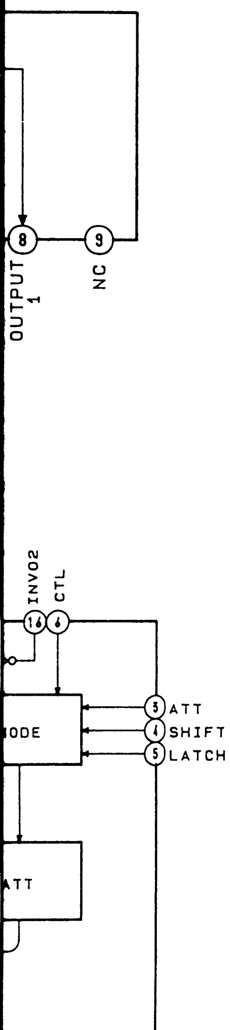
IC201 CXD2500AQ


MIRR
CLKO
XLTO
DATO
CNIN
SEIN
CLOK
VDD
XLAT
DATA
XRST
SENS
MUTE
SQCK
SQSO
EXCK
FOK
AUTO SEQUENCER
FSW
MON
MDP
MDS
LOCK
NC
CLV
VCOO
VCOI
TEST
PDO
PLL
VSS
NC
NC
NC
VPCO
VCKI
FILO
FILI
PCO
AVSS
CLTV
AVDD
RF
VCO
ASYMMETRY CORRECTOR
DATA BUS
EFM DEMODU-LATOR
DIGITAL OUT
VARIABLE PITCH CONTROL
CLOCK GENERA-TOR
ERROR CORREC-TOR
RAM
ADDRESS GENERA-TOR
D/A DATA PROCESSOR
SBSO
SCOR
WFCK
EMPH
DOUT
MD2
C16M
C4M
FSTT
XTSL
XTAO
XTAI
VSS
APTL
APTR
DA01
DA02
DA03
DA04
DA05
DA06
DA07
DA08
DA09
TEST2
TEST3
ASYO
TEST4
NC
PSSL
WDCK
LRCK
VDD
DA16
DA15
DA14
DA13
DA12
DA11
DA10

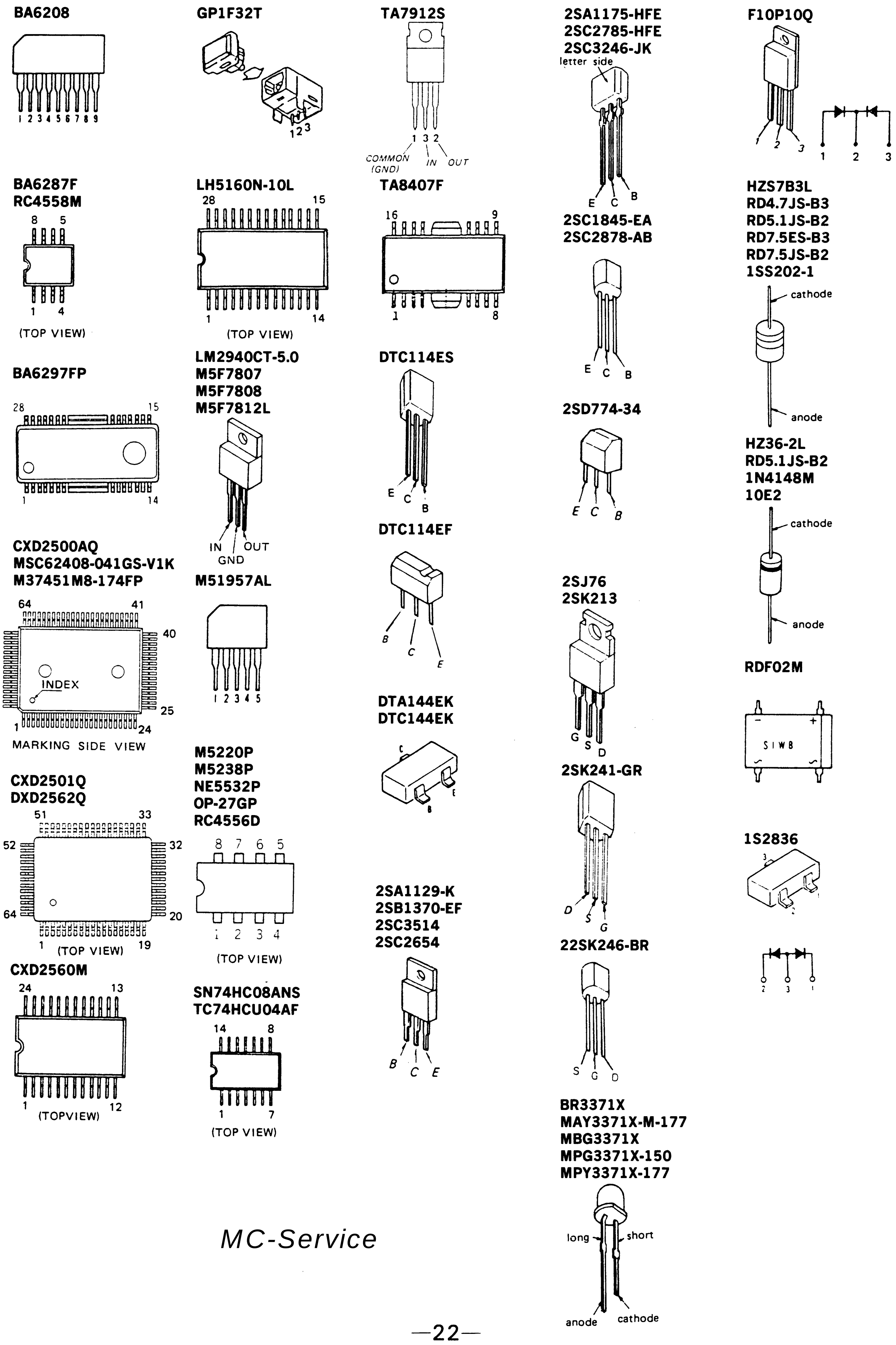
IC953 M51957AL


VDD
IN
5μA Standard
25μA Standard
OUT
1.25V
GND
DL

MC-Service


8
9
OUTPUT 1
NC
INV02
CTL
14
4
ODE
3 ATT
4 SHIFT
5 LATCH
ATT
19 BCKO
20 DL
21 DR
22 LRCKO

3-5. SEMICONDUCTOR LEAD LAYOUTS

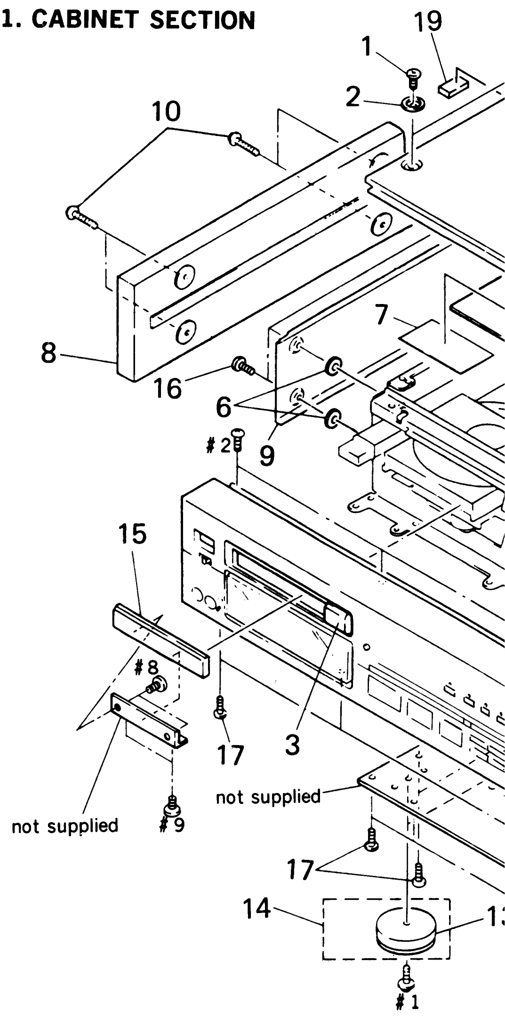

BA6208
1 2 3 4 5 6 7 8 9
BA6287F
RC4558M
8 5
1 4
(TOP VIEW)
BA6297FP
28 15
1 14
CXD2500AQ
MSC62408-041GS-V1K
M37451M8-174FP
64 41
65 40
INDEX
80 25
1 24
MARKING SIDE VIEW
CXD2501Q
DXD2562Q
51 33
52 32
64 20
1 (TOP VIEW) 19
CXD2560M
24 13
1 12
(TOPVIEW)
GP1F32T
1 2 3
LH5160N-10L
28 15
1 14
(TOP VIEW)
LM2940CT-5.0
M5F7807
M5F7808
M5F7812L
IN OUT
GND
M51957AL
1 2 3 4 5
M5220P
M5238P
NE5532P
OP-27GP
RC4556D
8 7 6 5
1 2 3 4
(TOP VIEW)
SN74HC08ANS
TC74HCU04AF
14 8
1 7
(TOP VIEW)
TA7912S
1 3 2
COMMON (GND)
IN OUT
TA8407F
16 9
1 8
DTC114ES
E C B
DTC114EF
B C E
DTA144EK
DTC144EK
2SA1129-K
2SB1370-EF
2SC3514
2SC2654
B C E
2SA1175-HFE
2SC2785-HFE
2SC3246-JK
letter side
E C B
2SC1845-EA
2SC2878-AB
E C B
2SD774-34
E C B
2SJ76
2SK213
G S D
2SK241-GR
D S G
22SK246-BR
S G D
BR3371X
MAY3371X-M-177
MBG3371X
MPG3371X-150
MPY3371X-177
long
short
anode
cathode
F10P10Q
1 2 3
1 2 3
HZS7B3L
RD4.7JS-B3
RD5.1JS-B2
RD7.5ES-B3
RD7.5JS-B2
1SS202-1
cathode
anode
HZ36-2L
RD5.1JS-B2
1N4148M
10E2
cathode
anode
RDF02M
S1W8
1S2836
3
2 3 1

EXP

NOTE:

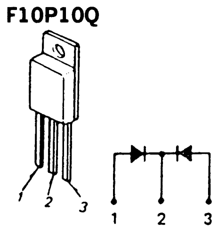
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

4-1. CABINET SECTION

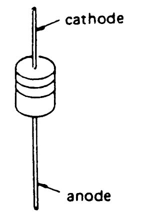

19
1
2
10
8
7
16
6
#2
9
15
#8
17
3
not supplied
not supplied
#9
17
14
13
#1

Ref. No.	Part No.	Description	Remar
1	4-924-242-01	SCREW (M3X6), FLAT HEAD (GOLD) (AEP)	
1	4-924-242-11	SCREW (M3X6), FLAT HEAD (BLACK)	
2	4-928-025-11	ESCUTCHEON (TOP PLATE) (BLACK)	
2	4-928-025-41	ESCUTCHEON (TOP PLATE) (GOLD) (AEP)	
3	X-4941-988-1	BUTTON (OPEN/CLOSE) ASSY (BLACK)	
3	X-4942-040-1	BUTTON (OPEN/CLOSE) ASSY (GOLD) (AE	
4	4-925-367-21	CASE (TOP PLATE) (BLACK)	
4	4-925-367-31	CASE (TOP PLATE) (GOLD) (AEP)	
* 5	4-913-189-11	FELT (B), ACOUSTIC ABSORBENT	
6	4-935-917-01	WASHER (CASE)	
* 7	4-923-563-11	CUSHION	
8	X-4922-574-2	PLATE (LEFT) ASSY, SIDE (BLACK) (AE	
8	X-4928-001-1	PLATE (LEFT) ASSY, SIDE (E)	
8	X-4941-168-2	PLATE(L) ASSY, SIDE, ORNAMENTAL (GOL (AEP)	
9	4-925-368-11	CASE (LEFT) (BLACK)	
9	4-925-368-21	CASE (LEFT) (GOLD) (AEP)	
10	4-885-979-11	SCREW (4X25) (AEP, E)	

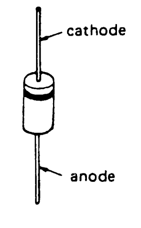
F10P10Q



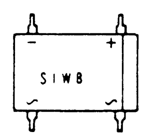
HZS7B3L
RD4.7JS-B3
RD5.1JS-B2
RD7.5ES-B3
RD7.5JS-B2
1SS202-1



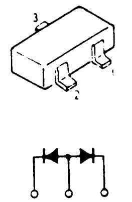
HZ36-2L
RD5.1JS-B2
1N4148M
10E2



RDF02M



1S2836



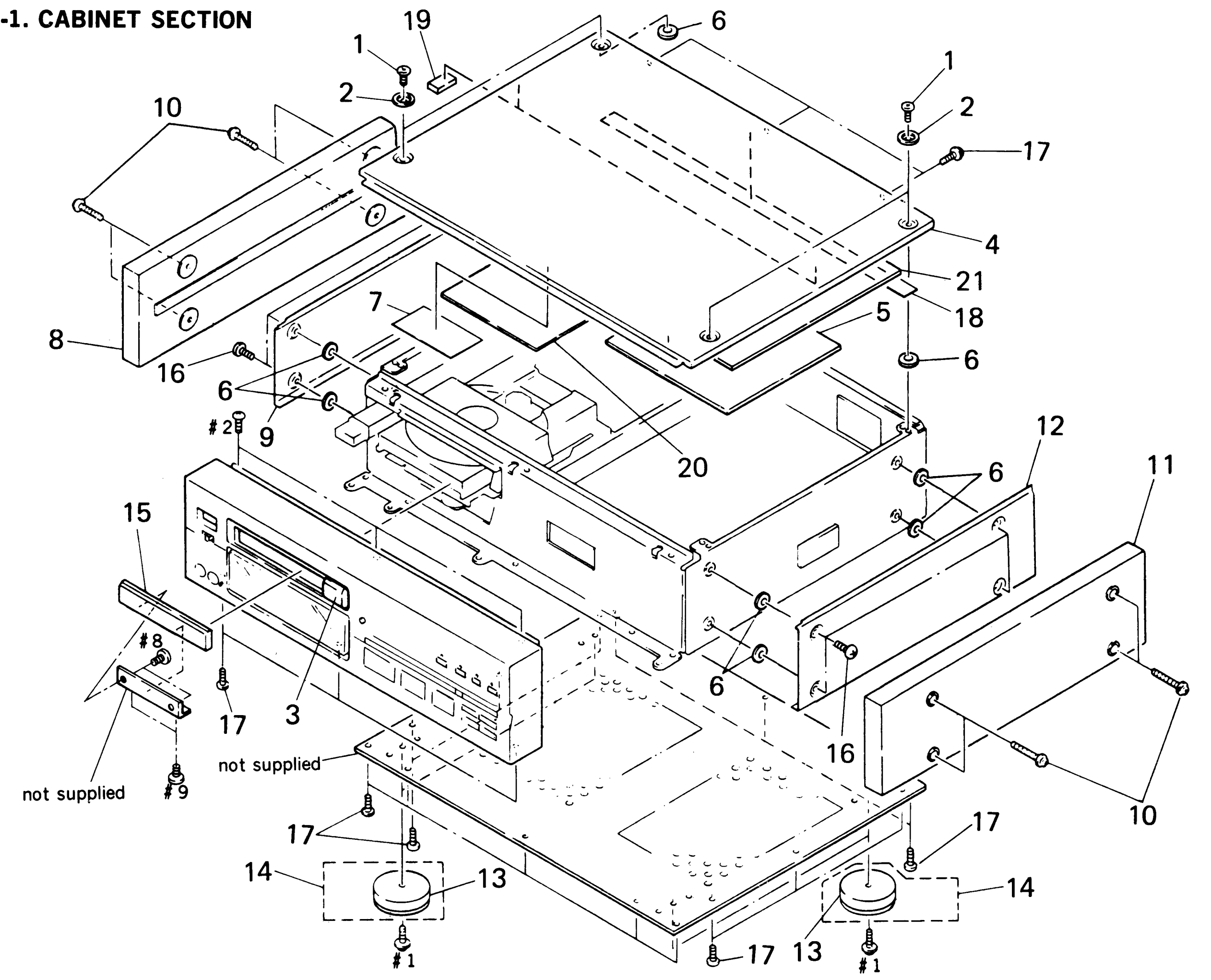
SECTION 4
EXPLODED VIEWS

NOTE :

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts Example :
  KNOB, BALANCE (WHITE)...(RED)
  ↑ Parts Color ↑ Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

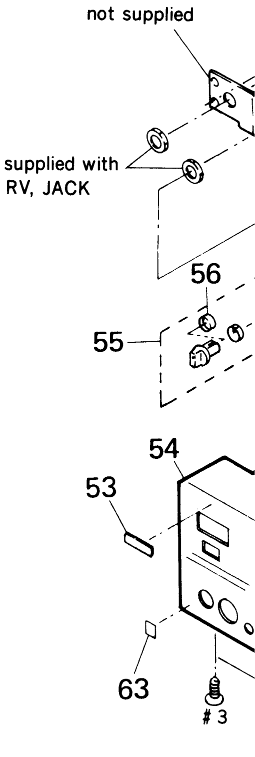
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

4-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	4-924-242-01	SCREW (M3X6), FLAT HEAD (GOLD) (AEP)	
1	4-924-242-11	SCREW (M3X6), FLAT HEAD (BLACK)	
2	4-928-025-11	ESCUTCHEON (TOP PLATE) (BLACK)	
2	4-928-025-41	ESCUTCHEON (TOP PLATE) (GOLD) (AEP)	
3	X-4941-988-1	BUTTON (OPEN/CLOSE) ASSY (BLACK)	
3	X-4942-040-1	BUTTON (OPEN/CLOSE) ASSY (GOLD) (AEP)	
4	4-925-367-21	CASE (TOP PLATE) (BLACK)	
4	4-925-367-31	CASE (TOP PLATE) (GOLD) (AEP)	
* 5	4-913-189-11	FELT (B), ACOUSTIC ABSORBENT	
6	4-935-917-01	WASHER (CASE)	
* 7	4-923-563-11	CUSHION	
8	X-4922-574-2	PLATE (LEFT) ASSY, SIDE (BLACK) (AEP)	
8	X-4928-001-1	PLATE (LEFT) ASSY, SIDE (E)	
8	X-4941-168-2	PLATE(L) ASSY, SIDE, ORNAMENTAL (GOLD) (AEP)	
9	4-925-368-11	CASE (LEFT) (BLACK)	
9	4-925-368-21	CASE (LEFT) (GOLD) (AEP)	
10	4-885-979-11	SCREW (4X25) (AEP, E)	
11	X-4922-575-2	PLATE (RIGHT) ASSY, SIDE (BLACK) (AEP)	
11	X-4928-002-1	PLATE (RIGHT) ASSY, SIDE (E)	
11	X-4941-169-2	PLATE(R) ASSY, SIDE, ORNAMENTAL (GOLD) (AEP)	
12	4-925-369-11	CASE (RIGHT) (BLACK)	
12	4-925-369-21	CASE (RIGHT) (GOLD) (AEP)	
* 13	4-925-370-02	BASE, FOOT (BLACK)	
14	X-4922-549-1	FOOT ASSY (BLACK)	
14	X-4941-711-1	FOOT ASSY (GOLD) (AEP)	
15	4-948-001-01	PANEL, LOADING (GOLD) (AEP)	
15	4-948-001-11	PANEL, LOADING (BLACK)	
16	4-847-802-00	SCREW (UK)	
17	4-929-074-01	SCREW (3X8)	
* 18	4-378-254-31	SHEET	
* 19	4-929-017-01	CUSHION	
* 20	4-935-913-11	CUSHION	
21	A-4675-309-A	REINFORCEMENT (TOP PLATE) ASSY	

4-2. FRONT PANEL S



Ref. No.	Part No.	De
51	3-655-653-21	BA
* 52	1-637-409-11	FU
53	4-908-848-01	EM
53	4-908-848-21	EM
* 54	4-948-000-21	PA
* 54	4-948-000-31	PA
* 54	4-948-000-41	PA
55	A-4604-901-A	KN
55	A-4604-952-A	KN (A
56	4-948-469-01	SP
57	4-922-978-01	HO
* 58	1-637-410-11	DI
59	4-941-647-01	BU
59	4-941-647-21	BU
60	4-922-518-11	KN
60	4-922-518-62	KN
* 61	4-928-053-01	HO

VS

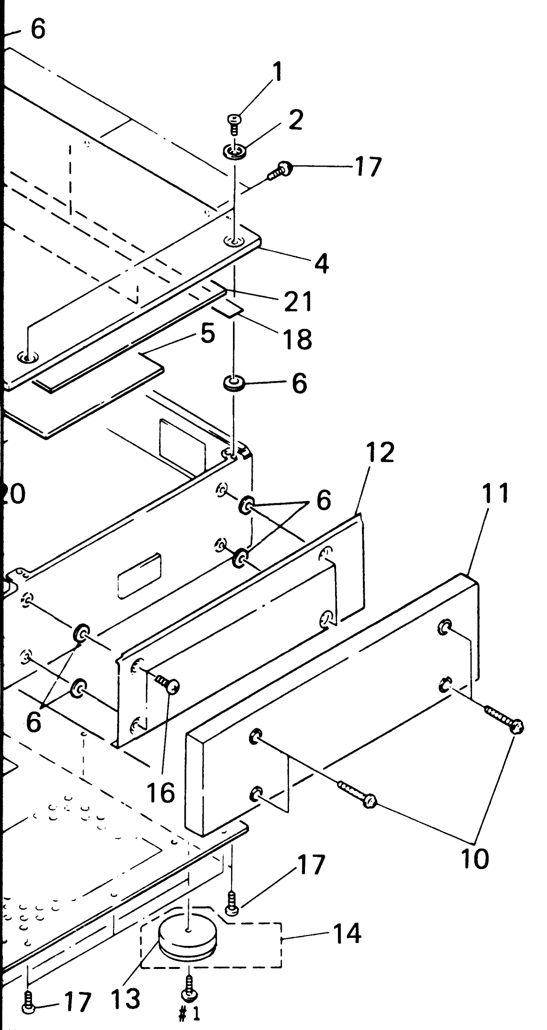
rdized parts, so they
ences from the origi-

Appearance Parts

(WHITE)...(RED)
↑ ↑
Color Cabinet's Color

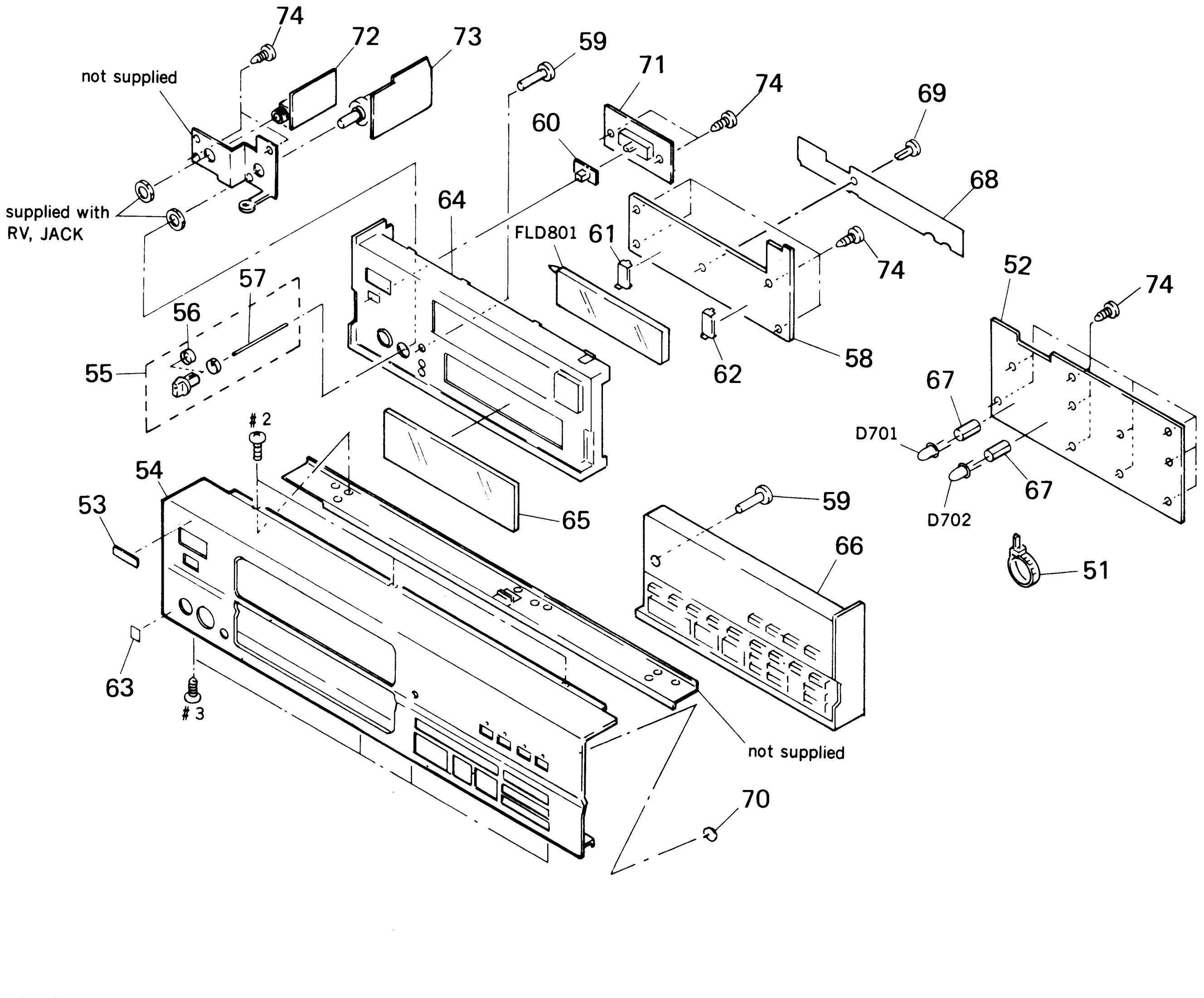
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



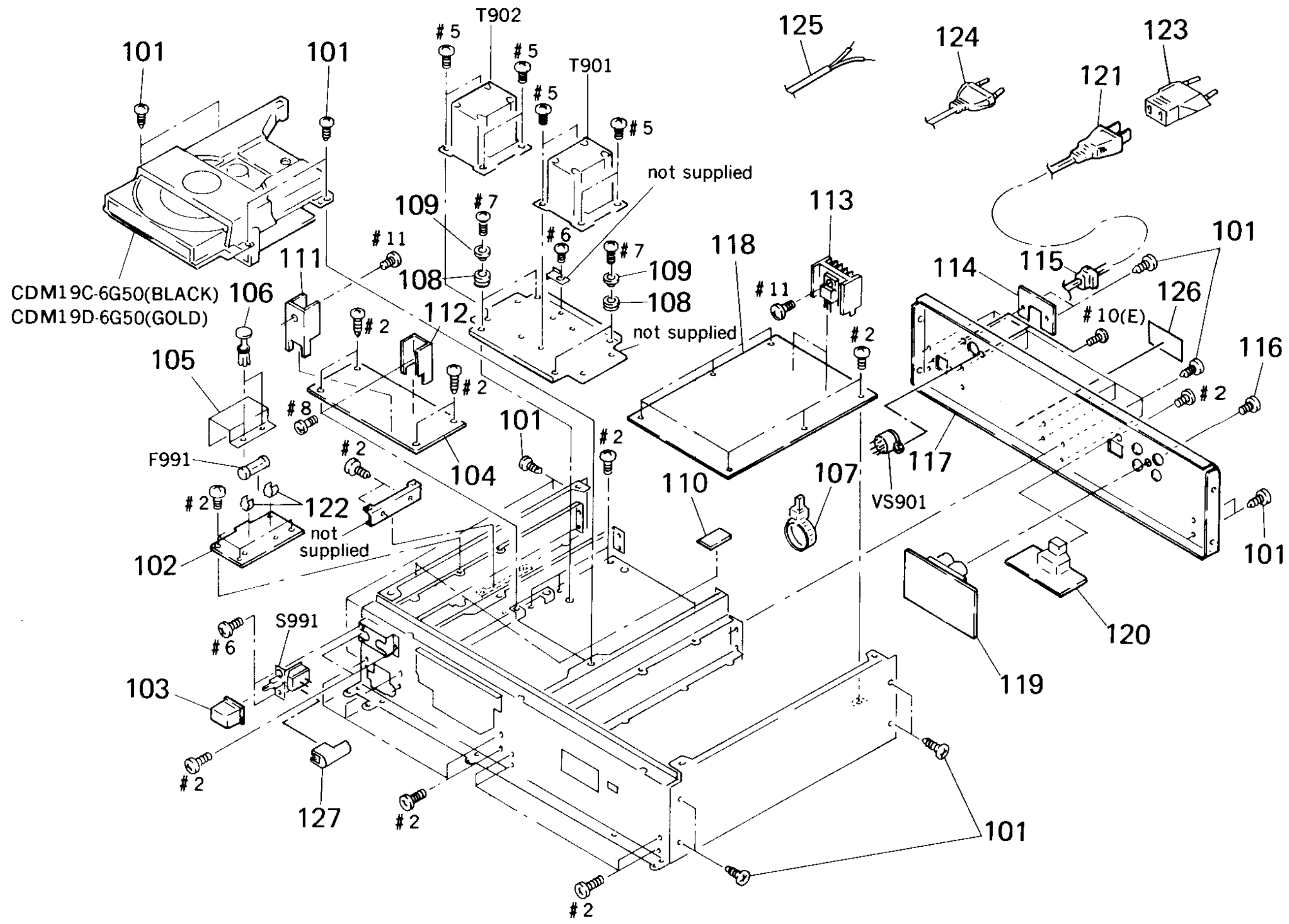
No.	Part No.	Description	Remark
	X-4922-575-2	PLATE (RIGHT) ASSY, SIDE (BLACK) (AEP)	
	X-4928-002-1	PLATE (RIGHT) ASSY, SIDE (E)	
	X-4941-169-2	PLATE(R) ASSY, SIDE, ORNAMENTAL (GOLD) (AEP)	
	4-925-369-11	CASE (RIGHT) (BLACK)	
	4-925-369-21	CASE (RIGHT) (GOLD) (AEP)	
	4-925-370-02	BASE, FOOT (BLACK)	
	X-4922-549-1	FOOT ASSY (BLACK)	
	X-4941-711-1	FOOT ASSY (GOLD) (AEP)	
	4-948-001-01	PANEL, LOADING (GOLD) (AEP)	
	4-948-001-11	PANEL, LOADING (BLACK)	
	4-847-802-00	SCREW (UK)	
	4-929-074-01	SCREW (3X8)	
	4-378-254-31	SHEET	
	4-929-017-01	CUSHION	
	4-935-913-11	CUSHION	
	A-4675-309-A	REINFORCEMENT (TOP PLATE) ASSY	

4-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-655-653-21	BAND (TAITON), BINDING	
* 52	1-637-409-11	FUNCTION BOARD	
53	4-908-848-01	EMBLEM, SONY (BLACK)	
53	4-908-848-21	EMBLEM, SONY (GOLD) (AEP)	
* 54	4-948-000-21	PANEL, FRONT (BLACK) (UK)	
* 54	4-948-000-31	PANEL, FRONT (BLACK) (AEP, E)	
* 54	4-948-000-41	PANEL, FRONT (GOLD) (AEP)	
55	A-4604-901-A	KNOB (LINE OUT/PHONE LEVEL) ASSY (BLACK)	
55	A-4604-952-A	KNOB (LINE OUT/PHONE LEVEL) ASSY (GOLD) (AEP)	
56	4-948-469-01	SPRING, RING	
57	4-922-978-01	HOLDER (FIBER) (GOLD) (AEP)	
* 58	1-637-410-11	DISPLAY BOARD	
59	4-941-647-01	BUTTON (DISPLAY) (BLACK)	
59	4-941-647-21	BUTTON (DISPLAY) (GOLD) (AEP)	
60	4-922-518-11	KNOB (TIMER) (BLACK)	
60	4-922-518-62	KNOB (TIMER) (GOLD) (AEP)	
* 61	4-928-053-01	HOLDER (LEFT)	
* 62	4-928-052-01	HOLDER (RIGHT)	
63	3-703-710-41	STICKER, SONY SYMBOL (12) (UK)	
64	X-4941-986-1	PANEL (BASE) (L) ASSY (BLACK)	
64	X-4941-987-1	PANEL (BASE) (L) ASSY (GOLD) (AEP)	
65	4-941-087-01	PLATE, INDICATION	
66	X-4941-210-1	BASE (R) ASSY, PANEL (BLACK)	
66	X-4941-678-1	BASE (R) ASSY, PANEL (GOLD) (AEP)	
* 67	4-923-532-21	SPACER, LED	
* 68	4-941-220-01	COVER (CABLE)	
69	3-531-576-11	RIVET	
70	4-941-648-01	INDICATOR (MODE)	
* 71	1-637-411-11	TIMER BOARD	
* 72	1-641-074-11	HP BOARD	
* 73	1-641-804-11	VR BOARD	
74	4-951-620-01	SCREW (2.6X8), +BVTP	
D701	8-719-970-07	LED MPG3371X-150 (▶)	
D702	8-719-971-52	LED MAY3371X-M-177 (❚❚)	
FLD801	1-519-622-11	INDICATOR TUBE, FLUORESCENT	

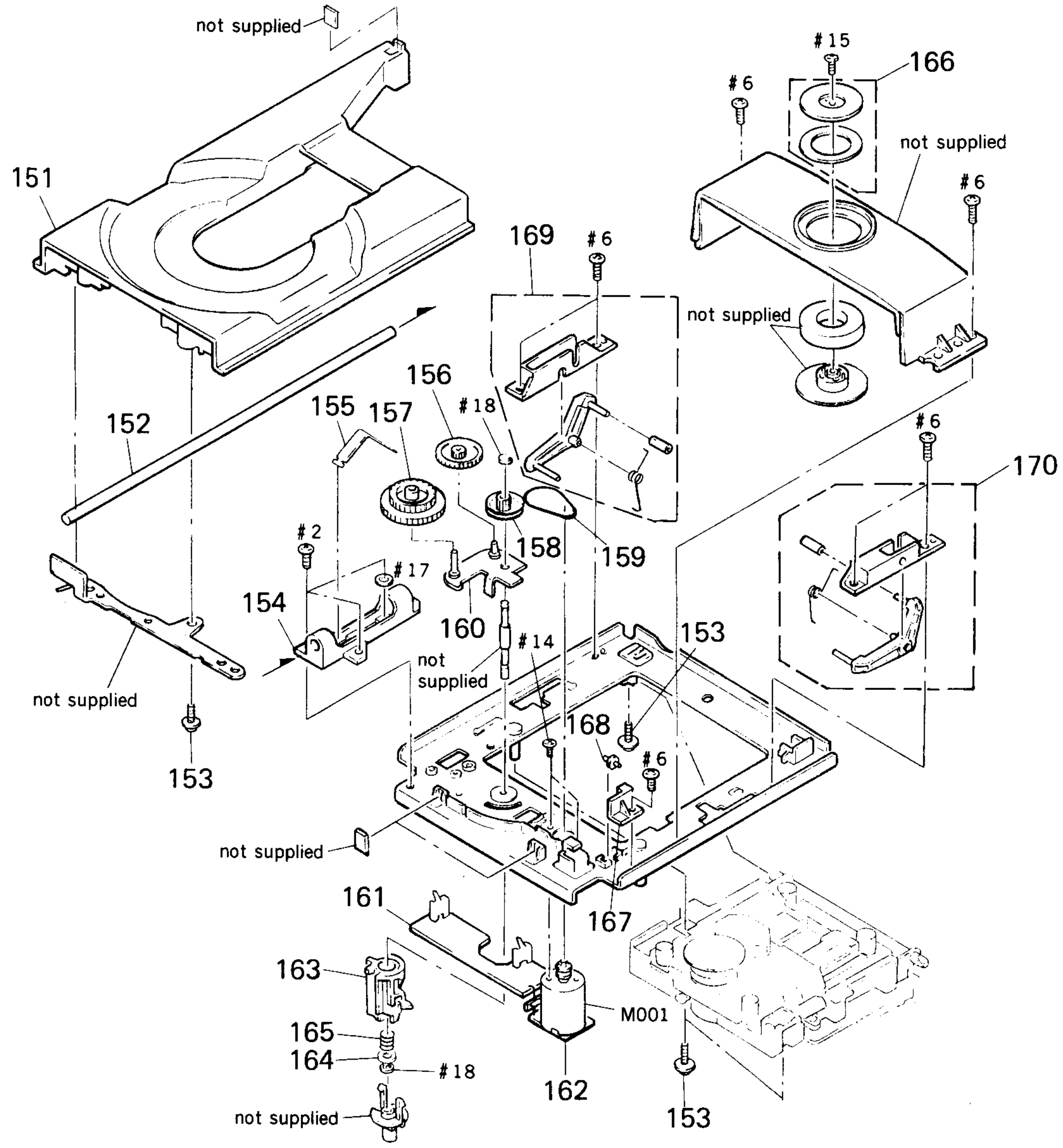
4-3. CHASSIS SECTION


101
101
#5
T902
#5
#5
T901
#5
125
124
123
121
not supplied
CDM19C-6G50(BLACK)
CDM19D-6G50(GOLD)
106
111
109
#7
#11
108
#6
#7
109
108
not supplied
118
113
#11
#2
114
115
#10(E)
126
101
116
#2
105
112
#2
#2
#8
101
#2
104
110
107
VS901
117
F991
#2
122
#2
not supplied
102
101
120
119
S991
#6
103
#2
127
#2
101
#2

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
101	4-929-074-01	SCREW (3X8)	
* 102	1-641-809-11	AC BOARD	
103	4-923-520-41	KNOB, POWER (GOLD) (AEP)	
103	4-923-520-51	KNOB, POWER (BLACK)	
* 104	A-4649-002-A	POWER BOARD, COMPLETE (UK, E)	
* 104	A-4649-377-A	POWER BOARD, COMPLETE (AEP)	
* 105	4-949-240-01	COVER (POWER PCB)	
106	3-531-576-11	RIVET	
107	3-655-653-21	BAND (TAITON), BINDING	
* 108	4-888-798-00	BUSHING, RUBBER	
109	4-928-032-01	COLLAR (A)	
110	3-831-441-XX	CUSHION	
* 111	4-941-237-01	HEAT SINK	
112	4-902-345-01	HEAT SINK	
* 113	4-363-146-00	HEAT SINK, V. OUT	
* 114	4-923-873-01	BRACKET, CORD STOPPER (BLACK)	
* 114	4-923-873-11	BRACKET, CORD STOPPER (GOLD) (AEP)	
* 115	3-703-244-00	BUSHING (2104), CORD	
116	3-703-685-21	SCREW (+BV 3X8)	
* 117	4-947-996-11	PANEL, BACK (BLACK) (AEP)	
* 117	4-947-996-21	PANEL, BACK (BLACK) (UK)	
* 117	4-947-996-41	PANEL, BACK (BLACK) (E)	
* 117	4-947-997-11	PANEL, BACK (GOLD) (AEP)	
* 118	A-4649-344-A	AUDIO BOARD, COMPLETE	
* 119	1-641-808-11	LINE OUT BOARD	
* 120	1-641-807-11	OPT BOARD	
⚠121	1-558-181-21	CORD, POWER (E)	
122	1-533-183-11	HOLDER, FUSE	
⚠123	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠124	1-558-568-21	CORD, POWER (AEP)	
⚠125	1-559-555-21	CORD, POWER (UK)	
* 126	4-941-548-01	LABEL, CLASS 1	
127	3-575-524-00	COVER, POWER SWITCH	
⚠F991	1-532-066-00	FUSE, TIME-LAG (0.4A) (AEP, UK)	
⚠F991	1-532-215-00	FUSE, TIME-LAG (0.8A) (E)	
⚠S991	1-570-156-11	SWITCH, PUSH (AC POWER) (1 KEY)	(POWER)
⚠T901	1-450-850-11	TRANSFORMER, POWER (AEP, UK)	
⚠T901	1-450-851-11	TRANSFORMER, POWER (E)	
⚠T902	1-450-852-11	TRANSFORMER, POWER (AEP, UK)	
⚠VS901	1-526-576-51	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	

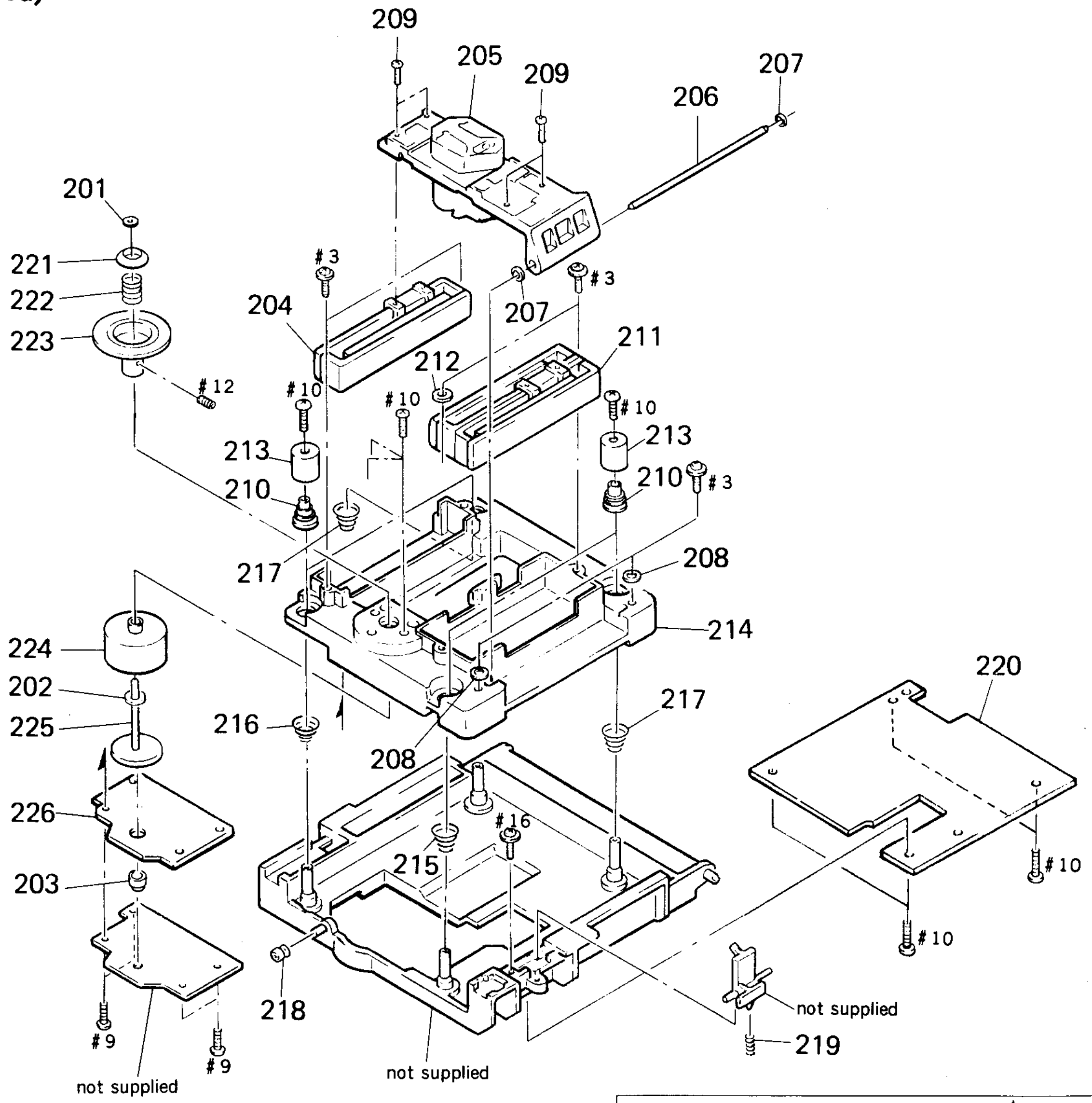
4-4. CD MECHANISM BLOCK SECTION
(CDM19C-6G50) : BLACK
(CDM19D-6G50) : GOLD


not supplied
#15
166
#6
not supplied
#6
151
169
#6
not supplied
not supplied
156
152
155
157
#18
#6
170
#2
158
159
#17
154
160
153
#14
not supplied
not supplied
168
#6
153
not supplied
161
167
163
M001
165
164
#18
162
not supplied
153

Ref. No.	Part No.	Description	Remark
151	4-948-353-01	TABLE, DISK (BLACK)	
151	4-948-353-11	TABLE, DISK (GOLD) (AEP)	
* 152	4-948-368-01	BAR (MAIN), GUIDE	
* 153	4-917-583-21	BRACKET, YOKE	
* 154	4-948-360-01	BEARING, LOADING	
* 155	4-927-648-01	SLIDER (GROUND)	
156	4-927-628-01	GEAR (C)	
157	4-927-620-01	GEAR (P)	
158	4-929-724-01	PULLEY (B)	
159	4-927-649-01	BELT	
160	X-4927-608-1	ARM ASSY, SWING	

Ref. No.	Part No.	Description	Remark
* 161	1-641-764-11	SW BOARD	
* 162	1-641-765-11	L. MOTOR BOARD	
* 163	4-948-371-01	CAM (BU)	
164	4-927-654-01	WASHER (LIMITER)	
165	3-659-338-00	SPRING, COMPRESSION	
166	A-4604-912-A	MAGNET ASSY	
* 167	4-948-361-01	GUIDE, LOADING	
168	4-927-627-01	ROLLER (S,G)	
169	A-4604-913-A	LOCK (L) ASSY, STABLE	
170	A-4604-914-A	LOCK (R) ASSY, STABLE	
M001	A-4604-347-A	MOTOR (L) ASSY	

4-5. BASE UNIT SECTION
(BU-6G)


209
205
209
207
206
201
221
222
223
#12
#3
204
207
#3
211
212
#10
#10
213
#10
213
210
210
#3
217
208
214
224
202
225
216
217
220
208
226
#16
215
203
218
#10
#10
not supplied
219
#9
#9
not supplied
not supplied

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
201	4-947-420-01	RING (DIA. 2.53), RETAINING	
202	3-701-439-11	WASHER	
203	4-943-342-01	BEARING	
204	A-4638-084-A	SENSOR ASSY, SPEED	
⚠205	8-848-244-11	DEVICE, OPTICAL KSS-272A	
* 206	4-910-431-01	SHAFT, SLIDE	
* 207	4-917-582-01	CUSHION, SLIDE	
208	4-927-318-01	WASHER	
209	3-318-203-61	SCREW (B1.7X4), TAPPING	
* 210	4-917-584-11	INSULATOR	
211	A-4608-335-A	MOTOR ASSY, LINEAR	
212	4-927-669-01	WASHER (BU)	
213	4-927-634-01	HOLDER (SP)	
214	4-922-671-02	MECHANISM BASE (M, 6)	
215	4-948-375-01	SPRING (F), COIL	
216	4-917-573-01	SPRING (E)	
217	4-917-571-01	SPRING (A)	
218	4-927-631-01	ROLLER (L)	
219	3-305-423-00	SPRING, COMPRESSION	
* 220	A-4649-007-A	BD BOARD, COMPLETE	
221	4-948-381-01	CAP, CENTERING	
222	4-908-213-01	SPRING, COMPRESSION	
223	X-4942-049-1	PULLEY ASSY, DISK	
224	4-948-382-02	BEARING (SPINDLE)	
* 225	A-4660-055-B	PULLEY ASSY, MOTOR	
* 226	A-4617-993-A	BSL BOARD, COMPLETE	

AC **AUDIO**

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-641-809-11	AC BOARD			
		********			
	1-533-183-11	HOLDER, FUSE			
		< CAPACITOR >			
⚠C991	1-162-599-12	CERAMIC	0.0047uF		400V
⚠C993	1-161-744-00	CERAMIC	0.01uF		400V
		< CONNECTOR >			
* CN991	1-535-140-00	BASE POST 22MM (10MM PITCH) 3P			
* CN992	1-535-140-00	BASE POST 22MM (10MM PITCH) 3P			
CN993	1-564-321-00	PIN, CONNECTOR 2P			
* CN994	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P			

****

Ref. No.	Part No.	Description			Remark
*	A-4649-344-A	AUDIO BOARD, COMPLETE			
		********************			
	1-535-988-11	TERMINAL, TAB			
*	4-363-146-00	HEAT SINK, V.OUT			
	7-682-147-15	SCREW, TR			
		< BUS BAR >			
* BUS901	1-691-279-11	BUS BAR 5P			
* BUS903	1-691-279-11	BUS BAR 5P			
* BUS904	1-566-959-11	BUS BAR 7P			
		< CAPACITOR >			
C401	1-136-812-11	FILM	470PF	5%	100V
C403	1-136-810-11	FILM	220PF	5%	100V
C404	1-136-810-11	FILM	220PF	5%	100V
C405	1-136-808-11	FILM	100PF	5%	100V
C406	1-136-808-11	FILM	100PF	5%	100V
C407	1-136-192-11	FILM	0.0018uF	2%	100V
C408	1-136-192-11	FILM	0.0018uF	2%	100V
C409	1-136-192-11	FILM	0.0018uF	2%	100V
C410	1-137-531-11	FILM	1uF	5%	100V
C413	1-130-495-00	MYLAR	0.1uF	5%	50V
C415	1-162-806-11	CERAMIC	0.1uF	10%	50V
C416	1-126-052-11	ELECT	100uF	20%	50V
C417	1-130-495-00	MYLAR	0.1uF	5%	50V
C419	1-162-806-11	CERAMIC	0.1uF	10%	50V
C421	1-136-165-00	FILM	0.1uF	5%	50V
C422	1-126-052-11	ELECT	100uF	20%	50V
C423	1-137-531-11	FILM	1uF	5%	100V
C424	1-137-531-11	FILM	1uF	5%	100V
C427	1-126-851-11	ELECT	22uF	20%	35V
C452	1-162-203-31	CERAMIC	15PF	5%	50V
C453	1-124-120-11	ELECT	220uF	20%	25V
C454	1-124-478-11	ELECT	100uF	20%	25V
C455	1-162-215-31	CERAMIC	47PF	5%	50V
C456	1-164-159-11	CERAMIC	0.1uF		50V
C501	1-136-812-11	FILM	470PF	5%	100V
C503	1-136-810-11	FILM	220PF	5%	100V
C504	1-136-810-11	FILM	220PF	5%	100V
C505	1-136-808-11	FILM	100PF	5%	100V
C506	1-136-808-11	FILM	100PF	5%	100V
C507	1-136-192-11	FILM	0.0018uF	2%	100V
C508	1-136-192-11	FILM	0.0018uF	2%	100V
C509	1-136-192-11	FILM	0.0018uF	2%	100V
C510	1-137-531-11	FILM	1uF	5%	100V
C513	1-130-495-00	MYLAR	0.1uF	5%	50V
C515	1-162-806-11	CERAMIC	0.1uF	10%	50V
C516	1-126-052-11	ELECT	100uF	20%	50V
C517	1-130-495-00	MYLAR	0.1uF	5%	50V
C519	1-162-806-11	CERAMIC	0.1uF	10%	50V
C521	1-136-165-00	FILM	0.1uF	5%	50V
C523	1-137-531-11	FILM	1uF	5%	100V
C524	1-137-531-11	FILM	1uF	5%	100V
C527	1-126-851-11	ELECT	22uF	20%	35V
C552	1-162-203-31	CERAMIC	15PF	5%	50V
C553	1-124-120-11	ELECT	220uF	20%	25V
C554	1-124-478-11	ELECT	100uF	20%	25V
C555	1-162-215-31	CERAMIC	47PF	5%	50V
C600	1-162-806-11	CERAMIC	0.1uF	10%	50V
C601	1-107-202-00	MICA	10PF	5%	500V
C602	1-107-202-00	MICA	10PF	5%	500V
C603	1-162-806-11	CERAMIC	0.1uF	10%	50V
C604	1-126-064-11	ELECT	220uF	20%	63V
C605	1-136-961-11	FILM	0.047uF	10%	160V
C606	1-126-052-11	ELECT	100uF	20%	50V

Ref. No.	Part No.	Description	Remark
C607	1-162-806-11	CERAMIC 0.1uF 10%	50V
C608	1-124-360-00	ELECT 1000uF 20%	16V
C609	1-136-165-00	FILM 0.1uF 5%	50V
C610	1-126-027-11	ELECT 1000uF 20%	25V
C611	1-126-301-11	ELECT 1uF 20%	50V
C612	1-126-163-11	ELECT 4.7uF 20%	50V
C613	1-162-806-11	CERAMIC 0.1uF 10%	50V
C615	1-124-921-11	ELECT 470uF 20%	63V
C616	1-124-910-11	ELECT 47uF 20%	50V
C617	1-123-604-00	ELECT 220uF 20%	63V
C622	1-124-912-11	ELECT 330uF 20%	50V
C623	1-136-165-00	FILM 0.1uF 5%	50V
C624	1-162-290-31	CERAMIC 470PF 10%	50V
C625	1-164-159-11	CERAMIC 0.1uF	50V
C627	1-136-165-00	FILM 0.1uF 5%	50V
C902	1-124-122-11	ELECT 100uF 20%	50V
C903	1-107-202-00	MICA 10PF 5%	500V
C904	1-126-170-11	ELECT 1000uF 20%	50V
C905	1-162-806-11	CERAMIC 0.1uF 10%	50V
C906	1-137-507-11	FILM 1uF 10%	63V
C907	1-162-806-11	CERAMIC 0.1uF 10%	50V
C908	1-126-059-11	ELECT 10uF 20%	50V
C922	1-124-122-11	ELECT 100uF 20%	50V
C923	1-107-202-00	MICA 10PF 5%	500V
C924	1-126-170-11	ELECT 1000uF 20%	50V
C925	1-162-806-11	CERAMIC 0.1uF 10%	50V
C926	1-137-507-11	FILM 1uF 10%	63V
C927	1-162-806-11	CERAMIC 0.1uF 10%	50V
C928	1-126-059-11	ELECT 10uF 20%	50V
		< CONNECTOR >	
* CN401	1-573-261-11	PIN, CONNECTOR 2P	
* CN402	1-573-261-11	PIN, CONNECTOR 2P	
* CN451	1-573-263-11	PIN, CONNECTOR 4P	
* CN452	1-573-263-21	PIN, CONNECTOR 4P	
* CN453	1-573-262-11	PIN, CONNECTOR 3P	
* CN501	1-573-261-21	PIN, CONNECTOR 2P	
* CN502	1-573-261-21	PIN, CONNECTOR 2P	
* CN601	1-569-997-11	PIN, CONNECTOR (PC BOARD) 10P	
* CN602	1-569-993-11	PIN, CONNECTOR (PC BOARD) 6P	
* CN603	1-573-261-31	PIN, CONNECTOR 2P	
* CN604	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
* CN901	1-573-865-21	PIN, CONNECTOR (PC BOARD) 6P	
		< DIODE >	
D601	8-719-114-27	DIODE RD4.7JS-B3	
D602	8-719-114-27	DIODE RD4.7JS-B3	
D603	8-719-114-30	DIODE RD5.1JS-B2	
D604	8-719-987-63	DIODE 1N4148M	

Ref. No.	Part No.	Description	Remark
D605	8-719-987-63	DIODE 1N4148M	
D606	8-719-987-63	DIODE 1N4148M	
D901	8-719-114-49	DIODE RD7.5JS-B2	
D921	8-719-114-49	DIODE RD7.5JS-B2	
		< IC >	
IC401	8-759-602-83	IC M5238P	
IC402	8-759-900-72	IC NE5532P	
IC403	8-759-900-72	IC NE5532P	
IC404	8-759-053-07	IC OP-27GP	
IC405	8-759-981-85	IC RC4556D	
IC501	8-759-602-83	IC M5238P	
IC502	8-759-900-72	IC NE5532P	
IC503	8-759-900-72	IC NE5532P	
IC504	8-759-053-07	IC OP-27GP	
IC601	8-759-044-10	IC CXD2562Q	
IC602	8-759-233-64	IC TC74HCU04AF	
IC603	8-752-342-65	IC CXD2560M	
IC604	8-759-233-64	IC TC74HCU04AF	
IC605	8-759-602-83	IC M5238P	
IC606	8-759-925-76	IC SN74HC08ANS	
IC901	8-759-602-01	IC M5220P	
IC902	8-759-231-58	IC M5F7812L	
IC922	8-759-245-86	IC TA7912S	
		< COIL >	
L601	1-410-969-11	INDUCTOR 4.7uH	
L602	1-410-969-11	INDUCTOR 4.7uH	
L603	1-410-969-11	INDUCTOR 4.7uH	
L604	1-410-397-21	FERRITE BEAD INDUCTOR	
L605	1-410-397-21	FERRITE BEAD INDUCTOR	
L606	1-410-397-21	FERRITE BEAD INDUCTOR	
L607	1-410-397-21	FERRITE BEAD INDUCTOR	
		< IC LINK >	
⚠PS901	1-532-686-00	LINK, IC (ICP-F75) 2.7A	
⚠PS921	1-532-675-00	LINK, IC (ICP-F38) 1.5A	
		< TRANSISTOR >	
Q402	8-729-203-06	TRANSISTOR 2SK30A-GR2	
Q403	8-729-184-53	TRANSISTOR 2SC1845-EA	
Q404	8-729-321-35	TRANSISTOR 2SK213	
Q405	8-729-307-65	TRANSISTOR 2SJ76	
Q406	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q407	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q408	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q409	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q502	8-729-203-06	TRANSISTOR 2SK30A-GR2	
Q503	8-729-184-53	TRANSISTOR 2SC1845-EA	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

AUDIO

Ref.No.	Part No.	Description	Remark
Q504	8-729-321-35	TRANSISTOR 2SK213	
Q505	8-729-307-65	TRANSISTOR 2SJ76	
Q506	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q507	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q508	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q509	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q600	8-729-203-06	TRANSISTOR 2SK30A-GR2	
Q601	8-729-620-23	TRANSISTOR 2SC3246-JK	
Q602	8-729-104-18	TRANSISTOR 2SC3514	
Q603	8-729-200-56	TRANSISTOR 2SK241-GR	
Q604	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q605	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q606	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q607	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q608	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q902	8-729-203-06	TRANSISTOR 2SK30A-GR2	
Q903	8-729-101-68	TRANSISTOR 2SC2654	
Q921	8-729-203-06	TRANSISTOR 2SK30A-GR2	
Q923	8-729-015-44	TRANSISTOR 2SA1129-K	
		< RESISTOR >	
R401	1-249-945-11	CARBON 8.2K 1% 1/4W	
R402	1-249-945-11	CARBON 8.2K 1% 1/4W	
R403	1-249-945-11	CARBON 8.2K 1% 1/4W	
R404	1-249-945-11	CARBON 8.2K 1% 1/4W	
R405	1-247-719-11	CARBON 3.3K 5% 1/4W	
R407	1-247-719-11	CARBON 3.3K 5% 1/4W	
R408	1-249-637-11	CARBON 33 5% 1/2W	
R409	1-249-947-11	CARBON 10K 1% 1/4W	
R410	1-249-947-11	CARBON 10K 1% 1/4W	
R411	1-249-941-11	CARBON 5.6K 1% 1/4W	
R412	1-249-941-11	CARBON 5.6K 1% 1/4W	
R413	1-249-941-11	CARBON 5.6K 1% 1/4W	
R414	1-249-941-11	CARBON 5.6K 1% 1/4W	
R415	1-249-929-11	CARBON 1.8K 1% 1/4W	
R416	1-249-929-11	CARBON 1.8K 1% 1/4W	
R417	1-249-929-11	CARBON 1.8K 1% 1/4W	
R418	1-249-929-11	CARBON 1.8K 1% 1/4W	
R419	1-249-461-11	CARBON 18K 5% 1/4W	
R420	1-249-929-11	CARBON 1.8K 1% 1/4W	
R421	1-247-713-11	CARBON 1K 5% 1/4W	
R422	1-249-947-11	CARBON 10K 1% 1/4W	
R423	1-249-556-11	CARBON 1.5K 5% 1/4W	
R424	1-247-700-11	CARBON 100 5% 1/4W	
R425	1-247-700-11	CARBON 100 5% 1/4W	
R426	1-249-637-11	CARBON 33 5% 1/2W	
R427	1-249-637-11	CARBON 33 5% 1/2W	
R428	1-249-637-11	CARBON 33 5% 1/2W	
R429	1-249-504-11	CARBON 10 5% 1/4W	
R430	1-214-761-00	METAL 22K 1% 1/4W	
R431	1-214-761-00	METAL 22K 1% 1/4W	
R432	1-214-783-00	METAL 180K 1% 1/4W	
R434	1-259-482-11	CARBON 180K 5% 1/6W	
R435	1-259-472-11	CARBON 68K 5% 1/6W	
R436	1-259-484-11	CARBON 220K 5% 1/6W	
R437	1-259-452-11	CARBON 10K 5% 1/6W	
R438	1-249-520-11	CARBON 47 5% 1/4W	
R442	1-259-428-11	CARBON 1K 5% 1/6W	
R443	1-259-484-11	CARBON 220K 5% 1/6W	
R444	1-259-468-11	CARBON 47K 5% 1/6W	
R445	1-259-468-11	CARBON 47K 5% 1/6W	
R451	1-259-456-11	CARBON 15K 5% 1/6W	
R452	1-259-470-11	CARBON 56K 5% 1/6W	
R453	1-259-476-11	CARBON 100K 5% 1/6W	
R454	1-259-444-11	CARBON 4.7K 5% 1/6W	
R455	1-249-522-11	CARBON 56 5% 1/4W	
R456	1-259-468-11	CARBON 47K 5% 1/6W	
R457	1-249-423-11	CARBON 3.3K 5% 1/4W	
R501	1-249-945-11	CARBON 8.2K 1% 1/4W	
R502	1-249-945-11	CARBON 8.2K 1% 1/4W	
R503	1-249-945-11	CARBON 8.2K 1% 1/4W	
R504	1-249-945-11	CARBON 8.2K 1% 1/4W	
R505	1-247-719-11	CARBON 3.3K 5% 1/4W	
R507	1-247-719-11	CARBON 3.3K 5% 1/4W	
R508	1-249-637-11	CARBON 33 5% 1/2W	
R509	1-249-947-11	CARBON 10K 1% 1/4W	
R510	1-249-947-11	CARBON 10K 1% 1/4W	
R511	1-249-941-11	CARBON 5.6K 1% 1/4W	
R512	1-249-941-11	CARBON 5.6K 1% 1/4W	
R513	1-249-941-11	CARBON 5.6K 1% 1/4W	
R514	1-249-941-11	CARBON 5.6K 1% 1/4W	
R515	1-249-929-11	CARBON 1.8K 1% 1/4W	
R516	1-249-929-11	CARBON 1.8K 1% 1/4W	
R517	1-249-929-11	CARBON 1.8K 1% 1/4W	
R518	1-249-929-11	CARBON 1.8K 1% 1/4W	
R519	1-249-461-11	CARBON 18K 5% 1/4W	
R520	1-249-929-11	CARBON 1.8K 1% 1/4W	
R521	1-247-713-11	CARBON 1K 5% 1/4W	
R522	1-249-947-11	CARBON 10K 1% 1/4W	
R523	1-249-556-11	CARBON 1.5K 5% 1/4W	
R524	1-247-700-11	CARBON 100 5% 1/4W	
R525	1-247-700-11	CARBON 100 5% 1/4W	
R526	1-249-637-11	CARBON 33 5% 1/2W	
R527	1-249-637-11	CARBON 33 5% 1/2W	
R528	1-249-637-11	CARBON 33 5% 1/2W	
R529	1-249-504-11	CARBON 10 5% 1/4W	
R530	1-214-761-00	METAL 22K 1% 1/4W	
R531	1-214-761-00	METAL 22K 1% 1/4W	

Ref. No.	Part No.	Description			Remark
R532	1-214-783-00	METAL	180K	1%	1/4W
R534	1-259-482-11	CARBON	180K	5%	1/6W
R535	1-259-472-11	CARBON	68K	5%	1/6W
R536	1-259-484-11	CARBON	220K	5%	1/6W
R537	1-259-452-11	CARBON	10K	5%	1/6W
R538	1-249-520-11	CARBON	47	5%	1/4W
R542	1-259-428-11	CARBON	1K	5%	1/6W
R543	1-259-484-11	CARBON	220K	5%	1/6W
R544	1-259-468-11	CARBON	47K	5%	1/6W
R545	1-259-468-11	CARBON	47K	5%	1/6W
R551	1-259-456-11	CARBON	15K	5%	1/6W
R552	1-259-470-11	CARBON	56K	5%	1/6W
R553	1-259-476-11	CARBON	100K	5%	1/6W
R554	1-259-444-11	CARBON	4.7K	5%	1/6W
R555	1-249-522-11	CARBON	56	5%	1/4W
R556	1-259-468-11	CARBON	47K	5%	1/6W
R557	1-249-423-11	CARBON	3.3K	5%	1/4W
R600	1-249-947-11	CARBON	10K	1%	1/4W
R601	1-249-425-11	CARBON	4.7K	5%	1/4W
R602	1-249-421-11	CARBON	2.2K	5%	1/4W
R603	1-249-417-11	CARBON	1K	5%	1/4W
R604	1-249-417-11	CARBON	1K	5%	1/4W
R607	1-247-903-00	CARBON	1M	5%	1/4W
R608	1-249-409-11	CARBON	220	5%	1/4W
R609	1-249-441-11	CARBON	100K	5%	1/4W
R610	1-249-429-11	CARBON	10K	5%	1/4W
R611	1-249-429-11	CARBON	10K	5%	1/4W
R613	1-249-520-11	CARBON	47	5%	1/4W
R614	1-247-710-11	CARBON	560	5%	1/4W
R615	1-259-484-11	CARBON	220K	5%	1/6W
R616	1-259-476-11	CARBON	100K	5%	1/6W
R617	1-247-700-11	CARBON	100	5%	1/4W
R618	1-249-520-11	CARBON	47	5%	1/4W
R620	1-259-484-11	CARBON	220K	5%	1/6W
R621	1-259-484-11	CARBON	220K	5%	1/6W
R622	1-259-484-11	CARBON	220K	5%	1/6W
R623	1-259-476-11	CARBON	100K	5%	1/6W
R624	1-259-476-11	CARBON	100K	5%	1/6W
R625	1-259-468-11	CARBON	47K	5%	1/6W
R626	1-259-468-11	CARBON	47K	5%	1/6W
R627	1-259-468-11	CARBON	47K	5%	1/6W
R628	1-259-468-11	CARBON	47K	5%	1/6W
R629	1-259-412-11	CARBON	220	5%	1/6W
R631	1-259-420-11	CARBON	470	5%	1/6W
R632	1-259-420-11	CARBON	470	5%	1/6W
R633	1-259-420-11	CARBON	470	5%	1/6W
R902	1-249-929-11	CARBON	1.8K	1%	1/4W
R903	1-249-929-11	CARBON	1.8K	1%	1/4W
R904	1-247-700-11	CARBON	100	5%	1/4W
R905	1-249-520-11	CARBON	47	5%	1/4W
⚠R906	1-219-022-11	FUSIBLE	100	5%	1/2W F
R922	1-249-929-11	CARBON	1.8K	1%	1/4W
R923	1-249-929-11	CARBON	1.8K	1%	1/4W
R924	1-247-700-11	CARBON	100	5%	1/4W
R925	1-249-520-11	CARBON	47	5%	1/4W
⚠R926	1-219-022-11	FUSIBLE	100	5%	1/2W F

< VIBRATOR >

Ref. No.	Part No.	Description
X601	1-577-686-11	VIBRATOR, CRYSTAL (45MHz)
X602	1-577-685-11	FILTER, CERAMIC (16.9344MHz)

****

* A-4649-007-A BD BOARD, COMPLETE

****

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C101	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C104	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-124-584-00	ELECT	100uF	20%	10V
C111	1-164-346-11	CERAMIC CHIP	1uF		16V
C112	1-164-346-11	CERAMIC CHIP	1uF		16V
C113	1-164-346-11	CERAMIC CHIP	1uF		16V
C114	1-164-346-11	CERAMIC CHIP	1uF		16V
C115	1-131-374-00	TANTALUM	33uF	10%	16V
C121	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C122	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C123	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C124	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C125	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C141	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C151	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C152	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C153	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C154	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C155	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C156	1-164-346-11	CERAMIC CHIP	1uF		16V
C157	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C158	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C159	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C160	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C161	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

BD

Ref.No.	Part No.	Description	Remark
C171	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C172	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C173	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C174	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C175	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C177	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C178	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C179	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C180	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C181	1-164-346-11	CERAMIC CHIP 1uF	16V
C201	1-163-809-11	CERAMIC CHIP 0.047uF 10%	25V
C202	1-163-011-11	CERAMIC CHIP 0.0015uF 10%	50V
C203	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C204	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C205	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V
C206	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C207	1-164-346-11	CERAMIC CHIP 1uF	16V
C301	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C302	1-125-622-11	CAP, DOUBLE LAYERS 0.1F	5.5V
C303	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C305	1-164-346-11	CERAMIC CHIP 1uF	16V
		< CONNECTOR >	
* CN101	1-573-276-11	PIN, CONNECTOR 6P	
CN102	1-568-799-11	SOCKET, CONNECTOR 16P	
* CN111	1-569-998-11	PIN, CONNECTOR (PC BOARD) 2P	
* CN112	1-580-001-11	PIN, CONNECTOR (PC BOARD) 4P	
* CN113	1-580-002-11	PIN, CONNECTOR (PC BOARD) 5P	
* CN141	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
* CN201	1-580-007-11	PIN, CONNECTOR (PC BOARD) 10P	
* CN202	1-580-003-11	PIN, CONNECTOR (PC BOARD) 6P	
* CN203	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
* CN301	1-691-464-11	PIN, CONNECTOR 8P	
* CN302	1-691-462-11	PIN, CONNECTOR 6P	
		< DIODE >	
D301	8-719-104-34	DIODE 1S2836	
		< IC >	
IC101	8-752-344-48	IC CXD2501Q	
IC102	8-759-040-80	IC BA6297FP	
IC103	8-759-040-83	IC BA6287F	
IC141	8-759-055-78	IC TA8407F	
IC142	8-759-981-92	IC RC4558M	
IC151	8-759-981-92	IC RC4558M	
IC152	8-759-981-92	IC RC4558M	
IC201	8-752-337-26	IC CXD2500AQ	
IC301	8-759-069-47	IC M37451M8-174FP	
IC302	8-759-512-81	IC LH5160N-10L	
		< TRANSISTOR >	
Q151	8-729-901-06	TRANSISTOR DTA144EK	
Q181	8-729-901-01	TRANSISTOR DTC144EK	
Q182	8-729-901-06	TRANSISTOR DTA144EK	
		< RESISTOR >	
R101	1-216-077-00	METAL CHIP 15K 5%	1/10W
R102	1-216-097-00	METAL CHIP 100K 5%	1/10W
R103	1-216-077-00	METAL CHIP 15K 5%	1/10W
R104	1-216-049-00	METAL CHIP 1K 5%	1/10W
R105	1-216-097-00	METAL CHIP 100K 5%	1/10W
R106	1-216-085-00	METAL CHIP 33K 5%	1/10W
R107	1-216-025-00	METAL CHIP 100 5%	1/10W
R108	1-216-295-00	METAL CHIP 0 5%	1/10W
R121	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R122	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R123	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R124	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R125	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R126	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R127	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R128	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R129	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R130	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R131	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R132	1-216-069-00	METAL CHIP 6.8K 5%	1/10W
R133	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R134	1-216-053-00	METAL CHIP 1.5K 5%	1/10W
R141	1-216-073-00	METAL CHIP 10K 5%	1/10W
R142	1-216-079-00	METAL CHIP 18K 5%	1/10W
R143	1-216-073-00	METAL CHIP 10K 5%	1/10W
R144	1-216-065-00	METAL CHIP 4.7K 5%	1/10W
R145	1-216-073-00	METAL CHIP 10K 5%	1/10W
R146	1-216-073-00	METAL CHIP 10K 5%	1/10W
R147	1-216-079-00	METAL CHIP 18K 5%	1/10W
R148	1-216-073-00	METAL CHIP 10K 5%	1/10W
R149	1-216-073-00	METAL CHIP 10K 5%	1/10W
R151	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
R152	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
R153	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
R154	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
R155	1-216-093-00	METAL CHIP 68K 5%	1/10W
R156	1-216-085-00	METAL CHIP 33K 5%	1/10W
R157	1-216-117-00	METAL CHIP 680K 5%	1/10W
R158	1-216-097-00	METAL CHIP 100K 5%	1/10W
R159	1-216-083-00	METAL CHIP 27K 5%	1/10W

Ref. No.	Part No.	Description			Remark
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W
R161	1-216-095-00	METAL CHIP	82K	5%	1/10W
R163	1-216-076-00	METAL CHIP	13K	5%	1/10W
R164	1-216-085-00	METAL CHIP	33K	5%	1/10W
R165	1-216-081-00	METAL CHIP	22K	5%	1/10W
R166	1-216-085-00	METAL CHIP	33K	5%	1/10W
R167	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R171	1-216-001-00	METAL CHIP	10	5%	1/10W
R172	1-216-001-00	METAL CHIP	10	5%	1/10W
R173	1-216-001-00	METAL CHIP	10	5%	1/10W
R174	1-216-001-00	METAL CHIP	10	5%	1/10W
R175	1-216-001-00	METAL CHIP	10	5%	1/10W
R177	1-216-001-00	METAL CHIP	10	5%	1/10W
R178	1-216-001-00	METAL CHIP	10	5%	1/10W
R179	1-216-001-00	METAL CHIP	10	5%	1/10W
R180	1-216-001-00	METAL CHIP	10	5%	1/10W
R181	1-216-029-00	METAL CHIP	150	5%	1/10W
R182	1-216-029-00	METAL CHIP	150	5%	1/10W
R183	1-216-073-00	METAL CHIP	10K	5%	1/10W
R184	1-216-097-00	METAL CHIP	100K	5%	1/10W
R191	1-216-295-00	METAL CHIP	0	5%	1/10W
R192	1-216-295-00	METAL CHIP	0	5%	1/10W
R201	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R202	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R203	1-216-073-00	METAL CHIP	10K	5%	1/10W
R204	1-216-121-00	METAL CHIP	1M	5%	1/10W
R205	1-216-105-00	METAL CHIP	220K	5%	1/10W
R206	1-216-073-00	METAL CHIP	10K	5%	1/10W
R207	1-216-041-00	METAL CHIP	470	5%	1/10W
R208	1-216-041-00	METAL CHIP	470	5%	1/10W
R209	1-216-041-00	METAL CHIP	470	5%	1/10W
R210	1-216-033-00	METAL CHIP	220	5%	1/10W
R211	1-216-073-00	METAL CHIP	10K	5%	1/10W
R212	1-216-037-00	METAL CHIP	330	5%	1/10W
R213	1-216-049-00	METAL CHIP	1K	5%	1/10W
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-049-00	METAL CHIP	1K	5%	1/10W
R310	1-216-121-00	METAL CHIP	1M	5%	1/10W
R311	1-216-037-00	METAL CHIP	330	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R313	1-216-049-00	METAL CHIP	1K	5%	1/10W
R314	1-216-073-00	METAL CHIP	10K	5%	1/10W
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W
R317	1-216-073-00	METAL CHIP	10K	5%	1/10W
R318	1-216-073-00	METAL CHIP	10K	5%	1/10W
R319	1-216-073-00	METAL CHIP	10K	5%	1/10W

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X301	1-577-377-11	VIBRATOR, CERAMIC (10MHz)	

****

* A-4617-993-A BSL BOARD, COMPLETE

****

< CAPACITOR >

Ref. No.	Part No.	Description			Remark
C10	1-124-779-00	ELECT CHIP	10uF	20%	16V
C11	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C20	1-124-779-00	ELECT CHIP	10uF	20%	16V
C21	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
* CN1	1-564-519-11	PLUG, CONNECTOR 4P	

< HOLE ELEMENT >

Ref. No.	Part No.	Description	Remark
H11	8-719-987-62	HALL DEVICE LT140SC	
H21	8-719-987-62	HALL DEVICE LT140SC	

< IC >

Ref. No.	Part No.	Description	Remark
IC11	8-759-055-78	IC TA8407F	
IC21	8-759-055-78	IC TA8407F	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description			Remark
J11	1-216-296-00	METAL CHIP	0	5%	1/8W

< RESISTOR >

Ref. No.	Part No.	Description			Remark
R11	1-216-049-00	METAL CHIP	1K	5%	1/10W
R12	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R13	1-216-105-00	METAL CHIP	220K	5%	1/10W
R14	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R15	1-216-105-00	METAL CHIP	220K	5%	1/10W
R16	1-216-077-00	METAL CHIP	15K	5%	1/10W
R17	1-216-077-00	METAL CHIP	15K	5%	1/10W
R18	1-216-150-00	METAL GLAZE	10	5%	1/8W
R19	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R21	1-216-049-00	METAL CHIP	1K	5%	1/10W
R22	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R23	1-216-105-00	METAL CHIP	220K	5%	1/10W
R24	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R25	1-216-105-00	METAL CHIP	220K	5%	1/10W
R26	1-216-077-00	METAL CHIP	15K	5%	1/10W

BSL DISPLAY FUNCTION TIMER

Ref. No.	Part No.	Description	Remark
R27	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R28	1-216-150-00	METAL GLAZE 10 5% 1/8W	
R29	1-216-070-00	METAL CHIP 7.5K 5% 1/10W	
**			
*	1-637-410-11	DISPLAY BOARD	
		*************	
*	1-637-409-11	FUNCTION BOARD	
		**************	
*	1-637-411-11	TIMER BOARD	
		***********	
*	4-923-532-21	SPACER, LED	
*	4-928-052-01	HOLDER (RIGHT)	
*	4-928-053-01	HOLDER (LEFT)	
		< CAPACITOR >	
C802	1-164-159-11	CERAMIC 0.1uF	50V
C803	1-164-159-11	CERAMIC 0.1uF	50V
		< CONNECTOR >	
* CN801	1-564-341-11	PIN, CONNECTOR 7P	
* CN802	1-506-503-11	PIN, CONNECTOR 9P	
* CN803	1-564-340-00	PIN, CONNECTOR 6P	
		< DIODE >	
D701	8-719-970-07	LED MPG3371X-150 (▶)	
D702	8-719-971-52	LED MAY3371X-M-177 (❚❚)	
D703	8-719-971-50	LED MBG3371X (CONTINUE)	
D704	8-719-971-52	LED MAY3371X-M-177(SHUFFLE)	
D705	8-719-987-97	LED BR3371X (PROGRAM)	
D706	8-719-970-98	LED MPY3371X-177 (C. INDEX)	
D801	8-719-107-94	DIODE 1SS202-1	
D802	8-719-107-94	DIODE 1SS202-1	
D803	8-719-107-94	DIODE 1SS202-1	
D804	8-719-107-94	DIODE 1SS202-1	
D805	8-719-107-94	DIODE 1SS202-1	
D806	8-719-107-94	DIODE 1SS202-1	
D807	8-719-107-94	DIODE 1SS202-1	
		< FLUORESCENT INDICATOR >	
FLD801	1-519-622-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC801	8-759-074-98	IC MSC62408-041GS-V1K	
IC802	8-741-100-48	IC SBX1610-59	
		< TRANSISTOR >	
Q701	8-729-900-80	TRANSISTOR DTC114ES	
Q702	8-729-900-80	TRANSISTOR DTC114ES	
Q703	8-729-900-80	TRANSISTOR DTC114ES	
Q704	8-729-900-80	TRANSISTOR DTC114ES	
Q705	8-729-900-80	TRANSISTOR DTC114ES	
Q706	8-729-900-80	TRANSISTOR DTC114ES	
Q801	8-729-900-45	TRANSISTOR DTC114EF	
Q802	8-729-900-45	TRANSISTOR DTC114EF	
		< RESISTOR >	
R701	1-249-406-11	CARBON 120 5% 1/4W	
R702	1-249-406-11	CARBON 120 5% 1/4W	
R703	1-249-406-11	CARBON 120 5% 1/4W	
R704	1-249-406-11	CARBON 120 5% 1/4W	
R705	1-249-417-11	CARBON 1K 5% 1/4W	
R706	1-249-409-11	CARBON 220 5% 1/4W	
R801	1-249-425-11	CARBON 4.7K 5% 1/4W	
R802	1-249-429-11	CARBON 10K 5% 1/4W	
R803	1-247-903-00	CARBON 1M 5% 1/4W	
R806	1-249-441-11	CARBON 100K 5% 1/4W	
R809	1-249-441-11	CARBON 100K 5% 1/4W	
		< SWITCH >	
S701	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE CONTINUE)	
S702	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE SHUFFLE)	
S703	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE PROGRAM)	
S704	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE C. INDEX)	
S705	1-554-937-11	SWITCH, KEY BOARD (⏮)	
S706	1-554-937-11	SWITCH, KEY BOARD (❚❚)	
S707	1-554-937-11	SWITCH, KEY BOARD (▶)	
S708	1-554-937-11	SWITCH, KEY BOARD (P. SEARCH)	
S709	1-554-937-11	SWITCH, KEY BOARD (⏭)	
S710	1-554-937-11	SWITCH, KEY BOARD (■)	
S711	1-554-937-11	SWITCH, KEY BOARD (DIMMER REPEAT)	
S712	1-554-937-11	SWITCH, KEY BOARD (◀◀)	
S713	1-554-937-11	SWITCH, KEY BOARD (FILE)	
S714	1-554-937-11	SWITCH, KEY BOARD (DIMMER TIME/MEMO)	
S715	1-554-937-11	SWITCH, KEY BOARD (▶▶)	
S716	1-554-937-11	SWITCH, KEY BOARD (ERASE)	
S717	1-554-937-11	SWITCH, KEY BOARD (FILE RECALL)	
S718	1-554-937-11	SWITCH, KEY BOARD (DISPLAY MODE)	
S719	1-554-937-11	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S801	1-554-937-11	SWITCH, KEY BOARD (⏏OPEN/CLOSE)	
S802	1-554-937-11	SWITCH, KEY BOARD (LEVEL FILE)	
S804	1-570-157-51	SWITCH, SLIDE (TIMER)	
		< VIBRATOR >	
X801	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	
**			

Ref. No.	Part No.	Description	Remark
*	1-642-074-11	HP BOARD	
		********	
		< CAPACITOR >	
C461	1-162-290-31	CERAMIC 470PF 10% 50V	
C561	1-162-290-31	CERAMIC 470PF 10% 50V	
		< JACK >	
J451	1-568-519-31	JACK, LARGE TYPE (PHONES) (BLACK)	
J451	1-568-519-61	JACK, LARGE TYPE (PHONES) (GOLD)	(AEP)
		< COIL >	
L461	1-412-473-21	INDUCTOR 0uH	(AEP)
L561	1-412-473-21	INDUCTOR 0uH	(AEP)
**			
*	1-641-765-11	L.MOTOR BOARD	
		*************	
**			
*	1-641-807-11	OPT BOARD	
		*********	
		< CAPACITOR >	
C280	1-126-059-11	ELECT 10uF 20% 50V	
		< CONNECTOR >	
* CN280	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
		< IC >	
IC280	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
**			
*	1-641-808-11	LINE OUT BOARD	
		**************	
		< CAPACITOR >	
C471	1-107-202-00	MICA 10PF 5% 500V	(AEP)
C472	1-107-202-00	MICA 10PF 5% 500V	(AEP)
C571	1-107-202-00	MICA 10PF 5% 500V	(AEP)
C572	1-107-202-00	MICA 10PF 5% 500V	(AEP)
		< DIODE >	
D471	8-719-987-63	DIODE 1N4148M	
		< JACK >	
J401	1-568-101-11	JACK, PIN 4P (LINE OUT)	

Ref. No.	Part No.	Description	Remark
		< COIL >	
L471	1-410-397-21	FERRITE BEAD INDUCTOR	(AEP)
L571	1-410-397-21	FERRITE BEAD INDUCTOR	(AEP)
		< RESISTOR >	
R470	1-247-690-11	CARBON 15 5% 1/4W	
R471	1-247-700-11	CARBON 100 5% 1/4W	
R570	1-247-690-11	CARBON 15 5% 1/4W	
R571	1-247-700-11	CARBON 100 5% 1/4W	
		< RELAY >	
RY471	1-515-727-11	RELAY	
**			
*	A-4649-002-A	POWER BOARD, COMPLETE (UK, E)	
*	A-4649-377-A	POWER BOARD, COMPLETE (AEP)	
		****************************	
	7-682-147-15	SCREW, TR	
	4-902-345-01	HEAT SINK	
*	4-941-237-01	HEAT SINK	
	7-682-545-09	SCREW +B 3X4	
		< BUS BAR >	
* BUS905	1-566-940-11	BUS BAR 6P	
		< CAPACITOR >	
C901	1-126-982-11	ELECT 5600uF 20% 35V	
C921	1-126-982-11	ELECT 5600uF 20% 35V	
C951	1-126-017-11	ELECT 6800uF 20% 16V	
C952	1-126-832-51	ELECT 3300uF 20% 10V	
C953	1-124-473-11	ELECT 1000uF 20% 10V	
C954	1-124-473-11	ELECT 1000uF 20% 10V	
C955	1-124-473-11	ELECT 1000uF 20% 10V	
C956	1-126-335-11	ELECT 220uF 20% 10V	
C957	1-126-162-11	ELECT 3.3uF 20% 50V	
C958	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C959	1-124-572-11	ELECT 100uF 20% 63V	
C960	1-126-233-11	ELECT 22uF 20% 50V	
C961	1-124-122-11	ELECT 100uF 20% 50V	
C962	1-124-122-11	ELECT 100uF 20% 50V	
C963	1-136-177-00	FILM 1uF 5% 50V	
C964	1-136-165-00	FILM 0.1uF 5% 50V	
C965	1-126-335-11	ELECT 220uF 20% 10V	
C966	1-124-473-11	ELECT 1000uF 20% 10V	
C971	1-164-159-11	CERAMIC 0.1uF 50V	(AEP)
		< CONNECTOR >	
* CN952	1-564-341-11	PIN, CONNECTOR 7P	

POWER SW VR

Ref. No.	Part No.	Description	Remark
* CN953	1-573-265-11	PIN, CONNECTOR 6P	
		< DIODE >	
D951	8-719-210-29	DIODE F10P10Q	
D952	8-719-210-29	DIODE F10P10Q	
D953	8-719-210-29	DIODE F10P10Q	
D954	8-719-210-29	DIODE F10P10Q	
D960	8-719-937-49	DIODE RDF02M	
D961	8-719-200-02	DIODE 10E2	
D963	8-719-200-02	DIODE 10E2	
D964	8-719-110-04	DIODE RD7.5ES-B3	
D965	8-719-913-62	DIODE HZ36-2L	
D966	8-719-933-48	DIODE HZS7B3L	
D971	8-719-987-63	DIODE 1N4148M	
		< IC >	
IC951	8-759-925-54	IC LM2940CT-5.0	
IC952	8-759-604-86	IC M5F7807	
IC953	8-759-636-16	IC M51957AL	
IC954	8-759-604-30	IC M5F7808	
		< TRANSISTOR >	
Q951	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q952	8-729-140-96	TRANSISTOR 2SD774-34	
		< RESISTOR >	
R951	1-249-417-11	CARBON 1K 5% 1/4W	
R952	1-249-423-11	CARBON 3.3K 5% 1/4W	
R953	1-249-436-11	CARBON 39K 5% 1/4W	
R954	1-249-431-11	CARBON 15K 5% 1/4W	
R955	1-249-425-11	CARBON 4.7K 5% 1/4W	
R956	1-249-433-11	CARBON 22K 5% 1/4W	
R957	1-249-433-11	CARBON 22K 5% 1/4W	
⚠R958	1-212-875-00	FUSIBLE 56 5% 1/4W	F
R959	1-249-417-11	CARBON 1K 5% 1/4W	
⚠R960	1-216-425-11	METAL OXIDE 56 5% 1W	F
⚠R961	1-215-860-11	METAL OXIDE 33 5% 1W	F
R965	1-249-429-11	CARBON 10K 5% 1/4W	
		< TERMINAL >	
* TB951	1-535-116-00	TERMINAL	
* TB952	1-535-118-00	TERMINAL	
* TB953	1-535-116-00	TERMINAL	
		< THERMISTOR >	
TH901	1-808-065-11	THERMISTOR, POSITIVE 0.5	
TH902	1-808-065-11	THERMISTOR, POSITIVE 0.5	
TH903	1-806-882-11	THERMISTOR, POSITIVE 2.2	
TH904	1-808-065-11	THERMISTOR, POSITIVE 0.5	

****

Ref. No.	Part No.	Description	Remark
*	1-641-764-11	SW BOARD ********	
		< CAPACITOR >	
C001	1-161-494-00	CERAMIC 0.022uF 25V	
		< RESISTOR >	
⚠R001	1-247-727-11	CARBON 10 5% 1/2W	F
⚠R002	1-247-727-11	CARBON 10 5% 1/2W	F
		< SWITCH >	
S001	1-571-300-21	SWITCH, ROTARY (IN SW)	
S002	1-571-300-21	SWITCH, ROTARY (OUT SW)	

****

Ref. No.	Part No.	Description	Remark
*	1-641-804-11	VR BOARD ********	
		< CAPACITOR >	
C350	1-164-159-11	CERAMIC 0.1uF 50V	
C351	1-164-159-11	CERAMIC 0.1uF 50V	
		< IC >	
IC350	8-759-962-08	IC BA6208	
		< TRANSISTOR >	
Q350	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R350	1-249-413-11	CARBON 470 5% 1/4W	
R351	1-249-417-11	CARBON 1K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV350	1-241-321-11	RES, VAR, CARBON 10KX3 (LINE OUT/PHONE LEVEL)(INCLUDING VOL MOTOR AND VOL LED)	

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *************	
⚠121	1-558-181-21	CORD, POWER (E)	
⚠123	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠124	1-558-568-21	CORD, POWER (AEP)	
⚠125	1-559-555-21	CORD, POWER (UK)	
⚠205	8-848-244-11	DEVICE, OPTICAL KSS-272A	
⚠F991	1-532-066-00	FUSE, TIME-LAG (0.4A) (AEP, UK)	
⚠F991	1-532-215-00	FUSE, TIME-LAG (0.8A) (E)	
M001	A-4604-347-A	MOTOR (L) ASSY	
⚠S991	1-570-156-11	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
⚠T901	1-450-850-11	TRANSFORMER, POWER (AEP, UK)	
⚠T901	1-450-851-11	TRANSFORMER, POWER (E)	
⚠T902	1-450-852-11	TRANSFORMER, POWER (AEP, UK)	
⚠VS901	1-526-576-51	SELECTOR, POWER VOLTAGE (VOLTAGE SELECTOR) (E)	

****

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS *******************************	
	1-465-592-11	COMMANDER, REMOTE (RM-D891) (GOLD) (INCLUDING ※1) (AEP)	
	1-465-593-11	COMMANDER, REMOTE (RM-D991) (BLACK) (INCLUDING ※1) (AEP, UK, E)	
	1-558-271-11	CORD, CONNECTION	
	1-590-925-31	CORD, CONNECTION	
	3-707-584-01	COVER, BATTERY (※1)	
	3-754-117-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)	
	3-754-117-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)	
	4-847-802-00	SCREW (BLACK) (AEP, E)	
	4-847-802-11	SCREW (GOLD) (AEP)	
*	4-925-305-01	CUSHION (SIDE) (UK)	
*	4-942-314-01	CUSHION (UPPER)	
*	4-942-315-01	CUSHION (LOWER)	
*	4-951-271-01	INDIVIDUAL CARTON	

****

Ref. No.	Part No.	Description	Remark
		************************** HARDWARE LIST **************************	
#1	7-682-664-09	SCREW +PSW 4X14	
#2	7-682-548-09	SCREW +BVTT 3X8 (S)	
#3	7-685-646-79	SCREW, TAPPING	
#4	7-685-870-01	SCREW +BVTT 3X5 (S)	
#5	7-682-560-04	SCREW +BVTT 4X6 (S)	
#6	7-682-547-04	SCREW +BVTT 3X6 (S)	
#7	7-682-549-09	SCREW +BVTT 3X10 (S)	
#8	7-682-545-09	SCREW +B 3X4	
#9	7-685-647-79	SCREW +P 3X10 TYPE2 SLIT	
#10	7-682-547-09	SCREW +BVTT 3X6 (S)	
#11	7-682-147-15	SCREW, TR	
#12	7-621-734-09	SET-SCT, HEX. 2.6X3	
#13	7-621-770-XX	SCREW +P 2.6X8	
#14	7-682-544-04	SCREW +P 3X3	
#15	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
#16	7-685-132-19	+ PTPWH (2.6X5)	
#17	7-688-003-12	W 3, MIDDLE	
#18	7-624-105-04	STOP RING 2.3, TYPE -E	

The components identified by
mark ⚠ or dotted line with mark
⚠ are critical for safety.
Replace only with part number
specified.